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DEVELOPMENT AND DEMONSTRATION OF STSim, A SIMULATION ENVIRONMENT FOR SPACE TECHNOLOGY SYSTEMS

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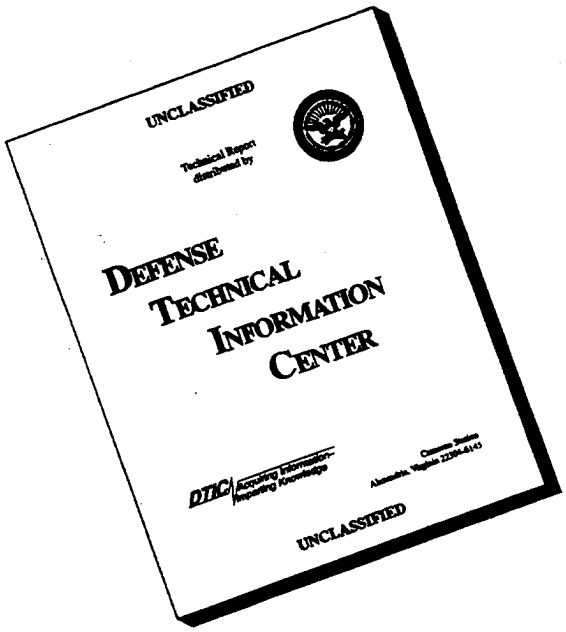

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14. Abstract

This report documents the development of Space Technologies Simulation (STSim), a simulation environment which incorporates on-orbit space experiment assets, such as sensors, satellites, communications networks, and command centers in support of definition, acquisition, and operations phases for the Space Experiments Directorate (PL/SX). The design methodology involves utilizing consistent software procedures, tools, and infrastructure in an object-oriented software environment with a flexible scope and level of fidelity to adapt individual project needs. The simulation supports both analysis and operator-in-the-loop modes of operation to allow applicability from initial concept assessment through operational phases of a program. The modular, open architecture can be extended to perform end-to-end spacecraft hardware in the loop simulation and to interface with external facilities such as in wargaming simulations using standard protocols.

15. Subject Terms
modeling, simulation, object-oriented software, space experiments, GPS, mission design, modular simulation, satellite design, satellite communications, telemetry

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1.0 PURPOSE/SCOPE

The purpose of this Phase I Small Business Innovative Research (SBIR) contract was to develop and demonstrate the Space Technologies Simulation (STSim), a simulation environment which has the following features:

- Incorporates on-orbit space experiment assets, i.e., sensors, satellites, communications networks, and command centers
- Supports all three Phillips Lab/SX (PL/SX) system phases, i.e., Definition, Acquisition, and Operations Phases
- Utilizes consistent software procedures, tools, and infrastructure
- Addresses issues at appropriate scope and level of fidelity
- Supports both analysis and operator-in-the-loop modes of operation
- Utilizes object-oriented software techniques

The specific STSim application chosen to demonstrate these features was a space-based optical sensor controlled by the forward user. The emphasis of STSim was on space experiment type assets, i.e., satellites (both bus and payload systems), communications networks, and command centers. More specifically, the satellite bus is a combination of Global Positioning System (GPS) Block IIA and Block IIR systems. The payload is an optical sensor which is controlled by commands from the ground, e.g., azimuth and elevation commands. The communications network is a three node system consisting of satellite, Falcon Air Force Base (FAFB), and PL nodes where FAFB serves as a relay node. The command center allows the user to send/receive both bus and payload commands/telemetry.

The following sections discuss the above STSim requirements (Section 2.0), the STSim development approach (Section 3.0), and STSim results (Section 4.0). Since the emphasis of the STSim program was on the final demonstration, only a summary of the results is presented in Section 4.0.

2.0 STSim REQUIREMENTS

The STSim requirements listed above are designed to support definition, acquisition, and operation of PL space experiments. In general, these phases are technically challenging as well as technically fluid. STSim is responsive to both of these aspects of space experiments.

2.1 INCORPORATE ON-ORBIT SPACE EXPERIMENT ASSETS

STSim is a specific application of the BCSi simulation environment (Fig. 1). All models of space experiment assets fall into command center (BCCmdCtr), communications network (BCCom), or physics-based environment (BCSim) simulation segments. The proctor and network manager segments of the BCSi simulation environment are not included in the current version of STSim, although they are options which may be added.

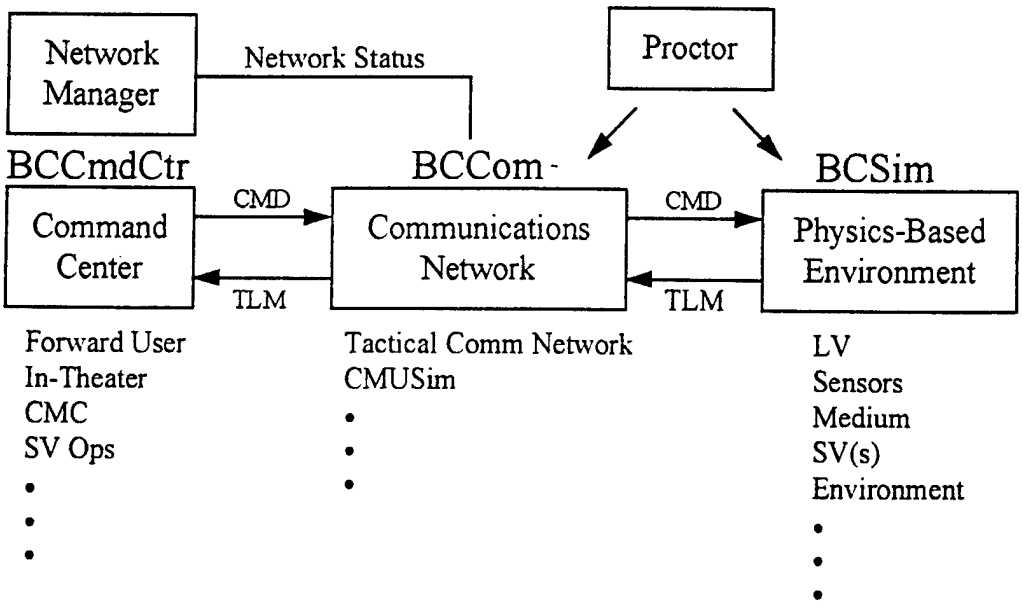


Figure 1. BCSi simulation environment.

BCCmdCtr software supports development of operator-in-the-loop Human Computer Interfaces (HCIs). These HCIs replicate operator interfaces such as telemetry screens and command

generation screens. The STSim HCI allows the user to send/receive both bus and payload commands/telemetry.

BCCom is a high-fidelity message-based communications modeling tool which includes features such as routing algorithms, buffer management, protocols, message priority, and node dynamics. BCCom supports both detailed analysis and operator-in-the-loop operations. BCCom is used in STSim to model the strawman three node space experiment communications network.

BCSim supports object-oriented development of physics-based models. Models may be continuous, multi-rate, and/or input/output-driven. BCSim also supports both analysis and operator-in-the-loop operations. STSim uses BCSim to model the satellite bus and payload systems.

2.2 SUPPORT ALL THREE PL/SX SYSTEM PHASES

STSim has the flexibility required to support all three PL/SX system phases, i.e., Definition, Acquisition, and Operations Phases.

2.2.1 Definition Phase

During the Definition Phase, the STSim environment can be used to derive detailed technical specifications. For example, the communications network segment of STSim (BCCom) can be used to define all system nodes and links. Nodes can be further defined to include buffer size and management algorithms, message processing rates, protocols, message routing, and message formats. Links can be further defined to include data rates and Bit Error Rates (BERs). The effects of each of these design parameters upon overall network performance can be assessed.

In a similar manner, detailed technical requirements of physics-based systems can also be derived using BCSim. For example, satellite subsystems and subsystem interfaces can be designed and analyzed, e.g., satellite attitude control laws, power system sizing, etc.

Finally, since both BCCom and BCSim support analysis and operator-in-the-loop modes of operation, STSim can be used to demonstrate prototype system operations to include operator HCIs. At the conclusion of the Definition Phase, then, the customer can clearly define the detailed technical requirements for communications networks, physics-based systems (e.g., satellites, sensors, etc.), and operator HCIs. These detailed technical requirements can serve as the basis for technical support of the Acquisition Phase.

2.2.2 Acquisition Phase

STSim can be used to support a number of aspects of the Acquisition Phase. First, the detailed technical requirements and models developed from the Definition Phase can provide both 'performance audit' and 'technical roadmap' information during system acquisition. For example, test results of system components can be integrated into STSim as they become available. Subsequent analysis can be used to provide both an ongoing audit of system performance and an assessment of the effects of component anomalies such as underperforming communications processors, higher BERs, etc.

Second, STSim can be used to exploit potential system upgrades. For example, technically sophisticated systems often require extended periods for system acquisition and test. During this time, new and/or improved technologies inevitably become available; technologies such as increased processor speeds, different network protocols, etc. STSim can be used to assess the utility of integrating these new/improved technologies.

And finally, STSim can be used to support actual component/subsystem testing by wrapping parts of STSim around the component of interest. For example, the STSim GPS satellite model can be used to drive ground control software or the command center software can be used to drive actual on-board satellite software. (Other BCSi software similar to STSim is currently being used in these capacities to support development of a commercial satellite program currently under development.)

2.2.3 Operations Phase

STSim can be used to support three aspects of the systems Operations Phase. First, it can be used to determine the performance of the current system under various loads and stresses. For example, the BCCom portion of STSim can be used to determine operational performance of the communications network under a variety of experiment message loadings and/or stress events such as link/node outage or degradation.

Second, various aspects of system anomalies can be analyzed using STSim. Again, with regard to the communications network, the high-fidelity, message-based features of BCCom can be used to identify specific nodes and specific effects of network anomalies. The effects can be determined via analysis and operator-in-the-loop modes of simulation. Once the problem has been identified, the solution or parameters of the solution can be determined. If the problem is a result of network issues such as buffer size, message processing rates, link BERs, etc., BCCom can be used to confirm potential solutions. If, on the other hand, the problem is embedded in the operational software, BCCom can support analysis of the parameters of the solution. Even though one would not use BCCom to debug operational software, it can be used to parameterize the solution, i.e., message processing rates, message formats, etc.

And third, various portions of STSim can support operator training for both satellite bus and payload subsystems.

2.3 CONSISTENT SOFTWARE PROCEDURES, TOOLS, AND INFRASTRUCTURE

STSim has been developed using a consistent set of BCSi procedures, tools, and infrastructure classes. The procedures are outlined in Section 3.0 and are grouped in object design, object development, and integrated system phases. Each phase supports the object-oriented approach and has specific tasks and reviews. Development of other applications will follow these same phases.

The major BCSi software segments used in STSim are consistent with the object-oriented approach. BCCmdCtr and BCSim are BCSi tools which support full object-oriented software development of HCIs and physics-based models, respectively. BCCom, the high-fidelity message-based network modeling tool, is not currently object-oriented. When used in operator-in-the-loop simulation environments, however, the network model is a separate process operating as an independent communications object.

Along with each of the STSim segments, there is an existing infrastructure developed during other internal/external projects. BCCmdCtr has been used to command and control several satellite systems as well as support missile warning. BCCom has been used to model a wide variety of communications networks, some for analysis and others for operator-in-the-loop operations. Network model applications have included both satellite command and control as well as missile warning. BCSim has been used to model satellites, launch vehicles, and sensors. A rich set of supporting classes such as FreeBody, SpaceVehicle, and LaunchVehicle has been developed which support a variety of other applications. Section 4.1.3 gives a brief overview of these classes.

The combination of procedures, tools, and infrastructure classes allows STSim to be tailored to the appropriate scope and level of fidelity during Definition, Acquisition, and Operations Phases of space experiments.

2.4 FLEXIBLE SCOPE AND LEVEL OF FIDELITY

As shown during the final demonstration, STSim is extremely flexible with regard to both scope and level of fidelity. With regard to STSim scope, depending upon the particular STSim configuration, various segments can be run standalone or integrated in an end-to-end simulation. For example, the communications network model and satellite operations can be run standalone for individual segment analysis. They may also be integrated with command center software to provide a simulation environment which extends from the satellite bus and payload systems through the communications network and to the forward user at PL.

Flexibility with regard to level of fidelity is also an integral part of STSim. For example, communications network models may be easily enhanced through the BCCom menu-driven interface and integrated with STSim. Subsystem models of satellites other than GPS Block IIA and IIR have been developed in support of numerous other simulation efforts and can be easily integrated. Such flexibility allows the user to tailor the simulation environment segments to the appropriate scope and level of fidelity.

2.5 SUPPORT BOTH ANALYSIS AND OPERATOR-IN-THE-LOOP MODES OF OPERATION

It is important that a simulation environment to be used in the defintion, acquisition, and operation of space-based experiments support both analysis and operator-in-the-loop modes of operation. Oftentimes, considerable insight is provided by an 'operator's eye' view of a detailed technical issue. Conversely, it is also important to be able to define the technical details of operational requirements. Obviously, both analysis and operator-in-the-loop modes must use consistent models.

As demonstrated in the Final Briefing, STSim supports both analysis and operator-in-the-loop modes of operation. The models used in both cases are the same; only the segment interfaces are modified.

2.6 UTILIZE OBJECT-ORIENTED TECHNIQUES

The fundamental feature of STSim which provides the capabilities mentioned above is the implementation of object-oriented design and development. Satellite subsystem models of one fidelity can be easily replaced with other models which have been tuned to the particular application. Software segments can be easily integrated to expand or restrict the scope of the simulation. As a result, the flexibility provided by the object-oriented approach makes STSim responsive to space experiment Definition, Acquisition, and Operations phases.

3.0 STSim DEVELOPMENT APPROACH

The approach used to develop STSim was to tailor the existing BCSi simulation environment to the space experiment application. Typically, development is conducted in three phases, each phase consisting of specific tasks and culminating with the following respective design reviews.

- Object Design Review - BCSi reviews overall STSim architecture and the scope and level of fidelity of all STSim objects. BCSi demonstrates object motion and an initial version of the user interface. Customer reviews object definition and user interface.
- Object Development Review - BCSi describes and demonstrates results of object development and upgrades to the user interface. Customer reviews object development with respect to scope and level of fidelity as well as the user interface with respect to preprocessing, runtime, and postprocessing data accessibility.
- Integrated System Review - BCSi presents results of the integrated operations.

Due to the size of this project, only a final demonstration of the Integrated System Review was conducted. The status of object design and development was documented via monthly status reports. The following sections give a brief description of the tasks performed during all three software phases.

3.1 OBJECT DESIGN PHASE

The purpose of the Object Design Phase was to define simulation objects and demonstrate the STSim object dynamics and HCI. Specific tasks performed include:

- Identify simulation requirements
- Specify relevant simulation scenario
- Define simulation architecture, i.e., define top-level objects and interrelationships
- Design and implement the dynamic motion of top-level objects (full object functionality is added during the Object Development Phase)

- Design minor objects within each top-level object to appropriate scope and level of fidelity
- Conduct Object Design Review

3.2 OBJECT DEVELOPMENT PHASE

The purpose of the Object Development Phase was to develop those objects defined during the previous phase and perform the first iteration of the HCI. Specific tasks include:

- Prototype all objects to prescribed scope and level of fidelity
- Verify object design with available test or analytical results
- Integrate minor objects within appropriate top-level objects
- Conduct Object Development Review

3.3 INTEGRATED SYSTEM PHASE

The purpose of the Integrated System Phase was to integrate all major and minor objects to form the STSim simulation environment. Specific tasks include:

- Integrate all STSim objects
- Begin testing end-to-end STSim
- Begin final report
- Conduct Integrated Systems Review

4.0 STSim RESULTS

The major segments of STSim correspond to the scope described previously (Fig. 2). The satellite operations command center was developed using BCCmdCtr and included bus and payload operations. The communications network was developed using BCCom and included nodes for PL, FAFB, and satellite communications. The space-based platform was developed using BCSim and included subsystem models for both the payload experiment and satellite bus operations.

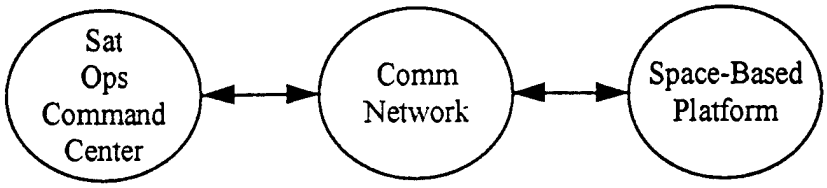


Figure 2. Top-level STSim software segments.

Sections 4.1 through 4.3 discuss each of these segments as they were presented in the final briefing, i.e., satellites, comm networks, and command centers. Each subsection discusses segment highlights, top-level design, and results. Section 4.4 gives a brief description other related options available, i.e., threat/launch vehicles, medium, and proctor functions.

4.1 STSim SATELLITE

4.1.1 Satellite Highlights

The satellite segment has the following features:

- Variable fidelity satellite bus and payload modeling capability
- Six degree of freedom orientation
- Kepler propagator or simple geosynchronous propagator models

- Fully object-oriented design for easy interchangeability of components and instantiation of multiple occurrences
- Bus subsystems are hybrids of GPS IIA/IIR and include TT&C, Propulsion, Thermal, Attitude Controls, Structures, Power
- Payload model is a ground-controlled optical sensor

4.1.2 Satellite Design

The satellite class and object hierarchies are depicted in Figure 3. The class hierarchy denotes that the STSim satellite inherits from the SpaceVehicle class which, in turn, inherits from the FreeBody class. Stated another way, the STSim satellite is a SpaceVehicle which is a FreeBody. The SpaceVehicle and FreeBody classes are part of the BCSi software infrastructure as implemented within BCSim. Together, these two classes support the physical integration of dynamic components. More specifically, the FreeBody class supports determination of forces/torques, orientation, and graphical realizations. The SpaceVehicle class supports six degree of freedom space vehicle dynamics. Detailed descriptions of the architecture and use of these classes are provided in other documents (Ref. 1).

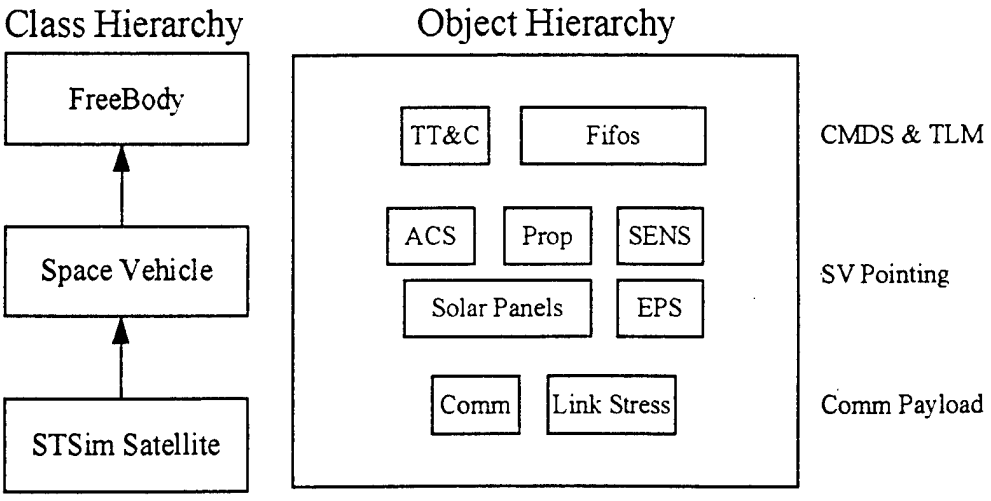


Figure 3. STSim satellite design.

The object hierarchy depicts the top-level subsystems of the STSim satellite. As indicated, these subsystems fall into the commands/telemetry, satellite pointing, and communications payload categories. In addition, the structure subsystem is modeled via the SpaceVehicle and FreeBody classes and does not appear explicitly within the object hierarchy. Features, design, and typical results of the major objects within the satellite hierarchy (i.e., structures, Electric Power Subsystem (EPS), Attitude Control System (ACS), propulsion, and payload) are discussed in the following subsections. The File In File Out (FIFO) and Link Stress objects support STSim satellite connectivity with other STSim segments such as the communications network model and command center and will not be discussed in detail.

4.1.3 Satellite Structures

4.1.3.1 Satellite Structures Highlights. The satellite structure model has the following features:

- Fully object-oriented architecture
- Automatically duplicates architecture of actual physical system via FreeBody/SpaceVehicle Classes
  - Attach components to base structure
  - Component defined by mass, moments of inertia, position/orientation, etc.
  - Virtual transmission of torque/forces and relative position/orientation
  - Supports 3-D graphical animation
  - Performs translation/rotation dynamics

4.1.3.2 Satellite Structures Design. The structures design hierarchy reflects the SpaceVehicle and FreeBody classes as well as the BCBlock class (Fig. 4). The BCBlock class supports object connectivity and controls object execution while the SpaceVehicle and FreeBody classes support functions described previously.

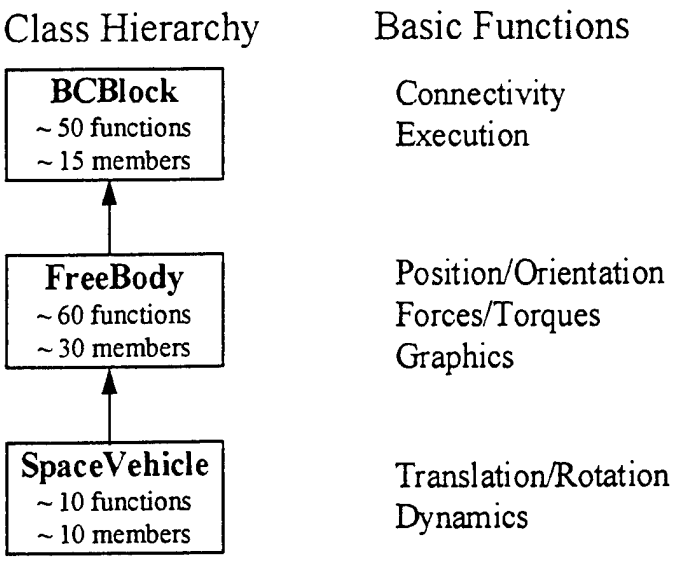


Figure 4. Satellite structures hierarchy.

When used together, these classes allow the developer to create a BCSim simulation of the satellite in software in a manner analogous to building the actual satellite in hardware. For example, attaching a sensor to the actual satellite structure establishes the orientation of the sensor vis-a-vis the satellite; and attaching a thruster establishes force/torque effects on the satellite. Similarly, the developer may "attach" a sensor or thruster to the satellite structure by specifying SpaceVehicle/FreeBody data members such as position and orientation values. After attaching the component, the developer may use any of the various member functions which determine orientations, forces, torques, dynamics, etc. Again, details of BCSim and existing infrastructure classes are contained in other documents (Ref. 1).

4.1.3.3 Satellite Structures Results. The results of the structure model were demonstrated during the final briefing and included 3-D articulated graphics, runtime control interfaces, and the dynamics effects of ACS and propulsion subsystems. Sun and earth motion were also included in the environment model. Plots depicting satellite dynamics, attitude control commands, and thruster forces for an initial capture scenario are presented in Section 4.1.5, Satellite Attitude Control Subsystem.

4.1.4 Satellite Electrical Power Subsystem

4.1.4.1 Satellite EPS Highlights. The satellite EPS model has the following features:

- Hybrid of GPS Block IIA/IIR configurations
- Models all power management functions, e.g., batteries, power regulation unit, and shunt dissipators
- GPS Block IIA solar array drive digital logic controller
- Supported by PowerLoad and PowerBus classes

4.1.4.2 Satellite EPS Design. The STSim satellite EPS model is a hybrid of an existing BCSi simulation of the GPS Block IIA EPS and the GPS Block IIR EPS. The Block IIR EPS, as described in the IIR Orbital Operations Handbook (OOH), is depicted in Figure 5. The class and object hierarchy as modeled in BCSim has an architecture consistent with IIR (Fig. 6). Solar array drive and battery models are IIA models. The Power Regulation Unit (PRU) and the EPS bus and power loading architecture are IIR designs.

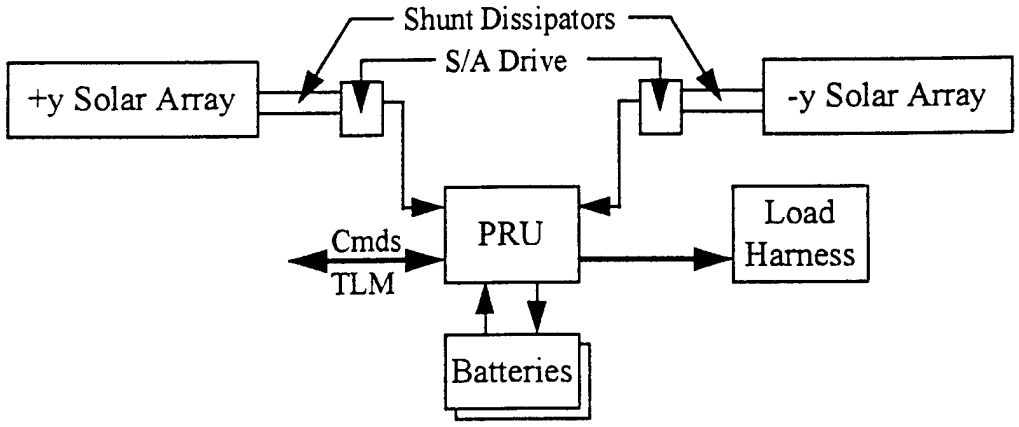


Figure 5. Satellite EPS subsystem.

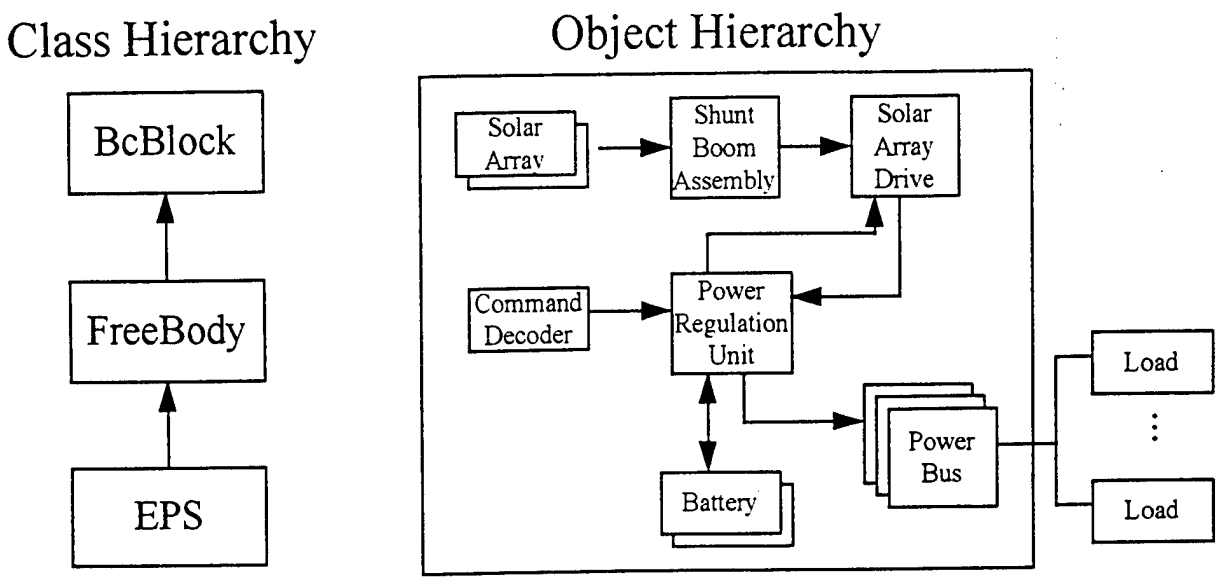
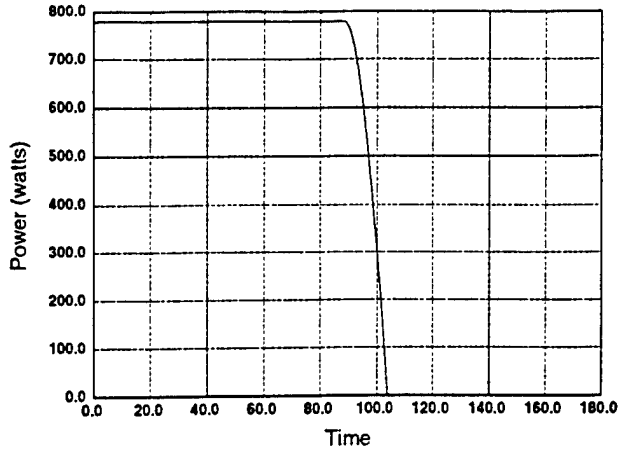


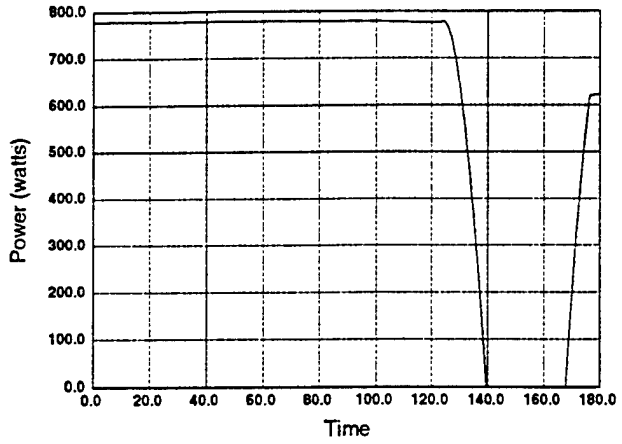
Figure 6. Satellite EPS hierarchy.

The EPS model has multiple power buses. Each bus can have multiple power loads attached to it via specifying individual impedances. By summing the bus impedance, the effects of component power loads on bus voltage can be modeled.

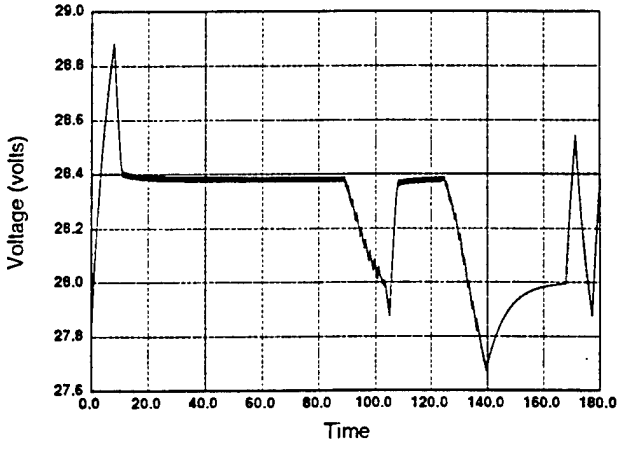
4.1.4.3 Satellite EPS Results. Figures 7 through 9 depict the results for a scenario wherein the solar panels are initially oriented to the sun and then are individually rotated via ground commands. Initially, both panels provide nearly 800 watts (Figs. 7a,b). Since this is considerably more than the power load required for this scenario (arbitrarily set to 600 watts), the power is directed to charging of the batteries as indicated by the increase in the battery voltage and the relatively small value of positive battery current (Figs. 8a,b). Since the power generated by the solar panels is still more than required, power is shunted as indicated by the drop in the net current coming out of the shunt boom assembly (Fig. 9b). After the initial transients settle, the bus voltage goes to 28.5 volts (Fig. 7c), the battery voltage and current go to their respective steady state charge values, and the boost current is not needed (Fig. 8c).



(a) +y panel power generated.

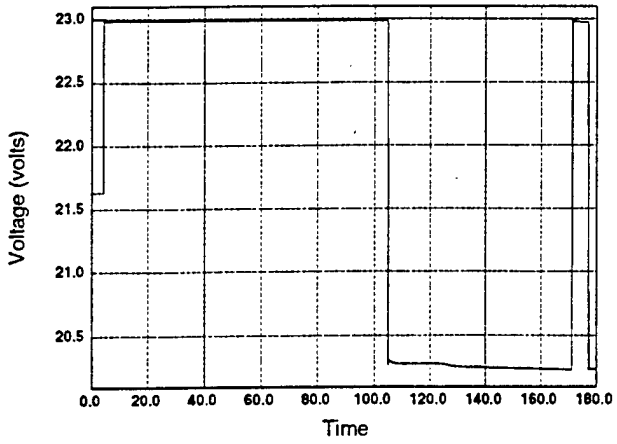


(b) -y panel power generated.

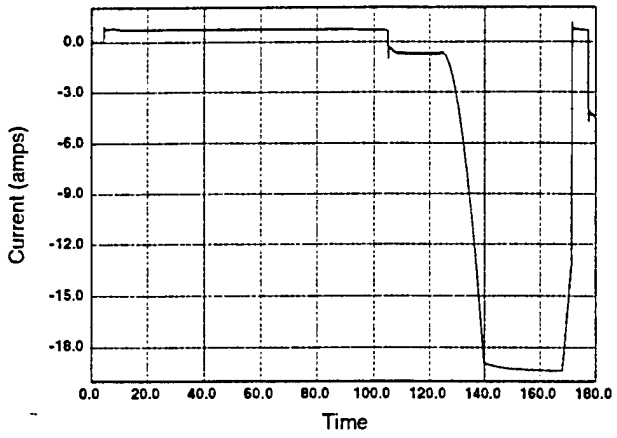


(c) Main bus voltage.

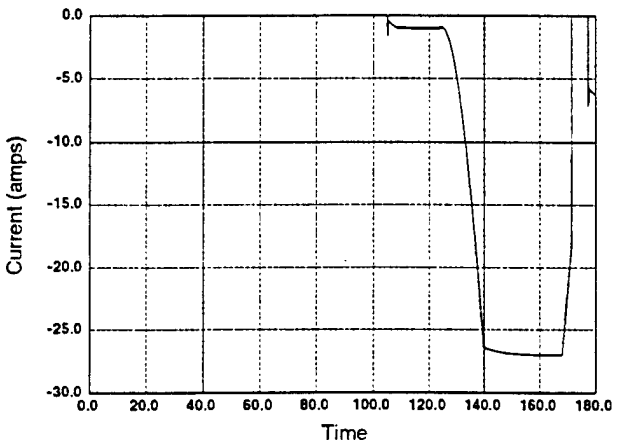
Figure 7. EPS panel power and bus voltage.



(a) Battery 1 voltage.

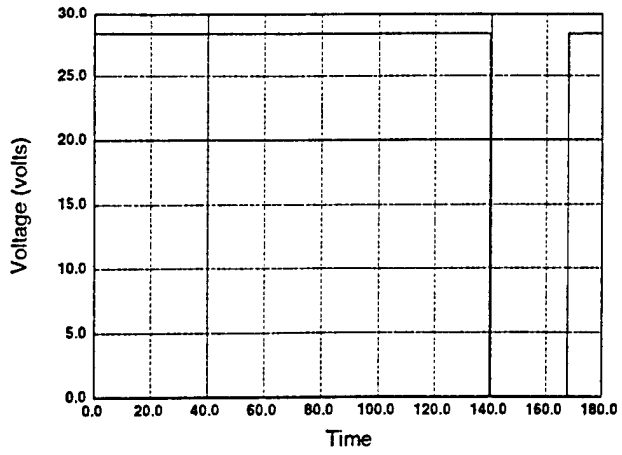


(b) Battery 1 current.

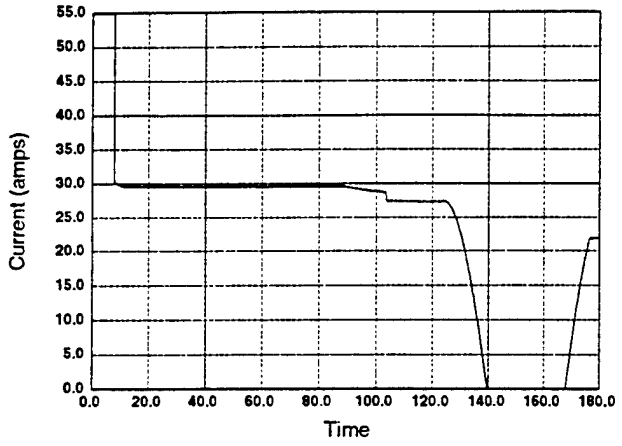


(c) Battery boost current.

Figure 8. EPS battery voltage, battery current, and boost current.



(a) Regulated voltage out of shunt boom assembly.



(b) Regulated current out of shunt boom assembly.

Figure 9. EPS shunt boom assembly output voltage and current.

The +y solar panel is rotated away from the sun starting at approximately 90 seconds into the scenario and faces completely away from the sun approximately 15 seconds later (Fig. 7a). As the +y panel is rotated, the bus voltage goes down a fraction of a volt (Fig. 7c), the batteries stop charging and are required to supply a small amount of boost current (Fig. 8). The battery boost voltage is fixed at approximately 20.2 volts (Fig. 8a). And finally, the net current out of the shunt boom is slightly reduced (Fig. 9c).

When the -y panel is rotated at approximately 125 seconds (Fig. 7b), the bus voltage again drops, the boost current from the batteries is increased considerably, and the power out of the shunt boom assembly drops to zero (i.e., the panels are supplying no power). Unlike the +y panel which stopped rotating when it faced away from the sun, the -y panel continued to rotate until it reached a fixed offset near the end of the scenario. The transients as the PRU adjusts between battery charging and batteries providing boost current are evident during the last ten seconds of the simulation run.

4.1.5 Satellite Tracking Telemetry and Control (TT&C)

4.1.5.1 Satellite TT&C Highlights. The satellite TT&C model has the following features:

- Receives GPS Block IIR commands
- Generates GPS Block IIR telemetry stream
- Records all commands received as a function of time
- Uses actual bit format for both commands and telemetry (excluding encryption)
- Decodes all seven types of commands (discrete, message, and configuration)
- Routes commands to appropriate subsystem
- Uses command database for decoding (343 discrete commands and 181 serial message commands)
- Transmits entire telemetry master frame (8 major frames, 64 minor frames, 4096 words)
- Uses telemetry master frame database (5968 items)
- Encodes actual sensed/measured values from subsystems
- Handles all types of telemetry (serial, analog, discrete logic)
- Uses the normal telemetry mode (but not Dwell or Dump modes)

4.1.5.2 Satellite TT&C Design. The satellite TT&C subsystem has been upgraded to reflect the GPS Block IIR architecture (Fig. 10). Starting with the commands received on-board the satellite, the Command Receiver class accepts the command and strips off any communications

network message headers. The resulting 20 bit command is then passed to the Command Decoder Unit (CDU). The CDU determines which of the seven the message types has been received, e.g., CDU configuration, CDU discrete, Payload Control Electronics (PCE) discrete, precursor, serial message, abort, and no operation commands.

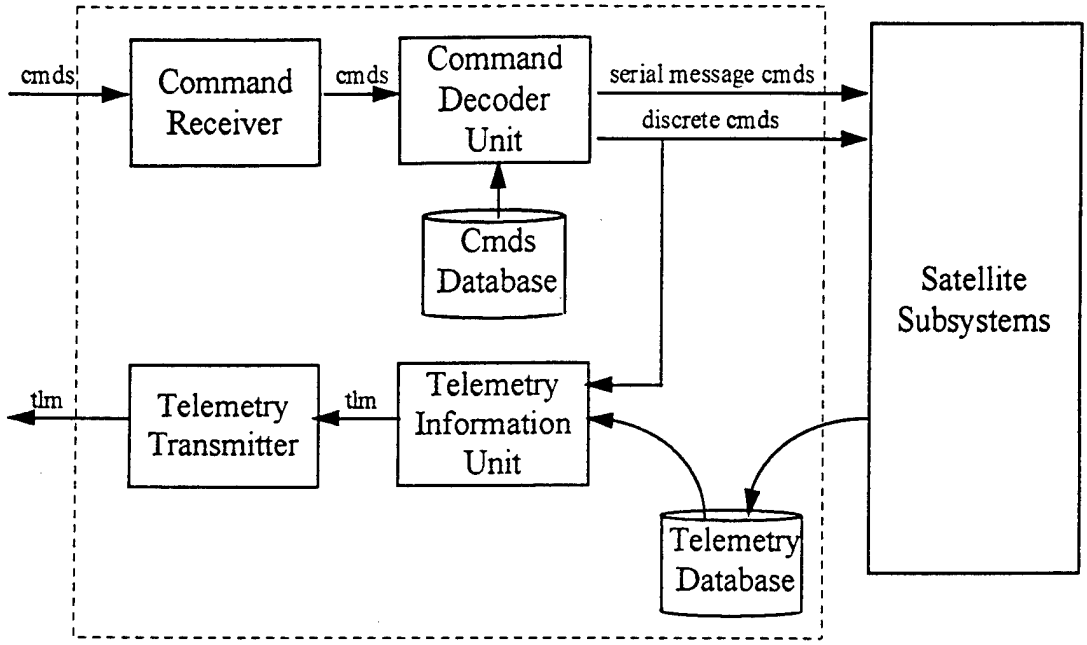


Figure 10. Satellite TT&C architecture.

Command processing depends upon the command type. CDU configuration commands apply to the CDU only and are not passed to any other subsystem. These commands turn on and/or swap CDUs.

The PCE and CDU discrete commands affect the payload and CDU subsystems, respectively. A 20-bit discrete command contains a 10-bit command code which is passed on to the appropriate subsystem for subsequent processing. The discrete commands database (Appendix A) is used to translate the 10-bit discrete command code into a command integer before it is passed to the corresponding subsystem.

Message commands are serial commands which start with a precursor command. The precursor puts the CDU into the message mode, setting the counter to the number of messages to follow. When in the message mode, only configuration commands or the abort command are accepted. Configuration commands are decoded and validated and then routed to other subsystems. Three types of configuration commands are processed: command words, data parameters, and checksums. The message command database is used to determine the command format (Appendix B). The abort message will immediately abort the message mode by returning the CDU to the non message mode.

When the message counter reaches zero, all messages have been received and the CDU exits the message mode. The CDU may also exit the message mode via the timeout feature (set to 42 seconds). If the entire message has not been received by the CDU timeout, the CDU will abort the message mode.

The no operations command is used for command verification and validation and ensures that the satellite is receiving commands. The command counter is incremented and will be evident in the telemetry stream.

The telemetry stream is constructed by the Telemetry Information Unit (TIU) on-board the satellite. The stream is constructed of one master frame per data cycle; each master frame consisting of 8 major frames; each major frame consists of 8 minor frames; and each minor frame consists of 64 words laid out in an 8x8 matrix. The size of one complete data cycle is 32,768 bits and can be transmitted at either 500 bps or 4000 bps.

The telemetry database has been created from the telemetry listing contained in the GPS Block IIR OOH (Appendix C). This database contains information about the telemetry measurands and the mapping of these measurands into the telemetry stream. Upon program initiation and reading of the telemetry database, measurand and telemetry stream mapping structures are created. Values in the measurand data structure may be updated by the appropriate satellite subsystems.

The mapping structure creates the telemetry stream using the current values in the measurand data structure.

In creating the telemetry stream, the TIU operates in one of three modes: Normal, Dump and Dwell. The Normal mode creates the stream from the nominal mapping information. In the Dump and Dwell modes, minor frame words 4 through 7, 12 through 15, etc. are replaced with the data requested by the Dump or Dwell modes. The STSim TT&C only operates in the Normal mode.

Finally, there are four measurand formats: Serial, Analog High, Analog Passive, and Discrete Logic. Information contained in the OOH specifies which format applies to each measurand.

4.1.5.3 Satellite TT&C Results. All commands are recorded to a log file during a specific run. These log files can be used for operator review and/or for script inputs. A small portion of the log file of a particular run is depicted in Figure 11.

```
DISCRETE Cmd 1 issued at 29.900000
DISCRETE Cmd 201 issued at 144.900000
DISCRETE Cmd 209 issued at 151.900000
DISCRETE Cmd 211 issued at 152.900000
DISCRETE Cmd 221 issued at 156.400000
DISCRETE Cmd 221 issued at 163.400000
DISCRETE Cmd 223 issued at 166.400000
Message Mode ENABLED for 3 msgs at 209.400000
Received MESSAGE 3000001 at 210.400000
Received MESSAGE 2000621 at 210.900000
Received MESSAGE 2000454 at 211.150000
MESSAGE issued and Mode terminated at 211.150000
Message Mode ENABLED for 3 msgs at 219.025000
Received MESSAGE 3000001 at 220.025000
Received MESSAGE 2000145 at 220.525000
Received MESSAGE 2000454 at 220.775000
```

Figure 11. Satellite TT&C commands log file.

The log file indicates several discrete commands were received. At approximately 209 seconds into the simulation, the message mode was enabled and a message command was received on-board the satellite. The message mode was terminated at approximately 211 seconds. Another message command was sent at approximately 220 seconds.

STSim telemetry is not logged, although this feature is available and has been incorporated in other BCSi simulation environments. Generation of telemetry on the satellite transmission through the communications network, and display at the PL/Command Center was demonstrated during the final briefing.

4.1.6 Satellite Attitude Control Subsystem (ACS)

4.1.6.1 Satellite ACS Highlights. The satellite ACS model has the following features:

- High-fidelity GPS IIA jet controller
- Jet select modified for GPS IIR
- Mass properties updated for GPS IIR
- Sensor architecture updated to use FreeBody class
- Solar panel controller is GPS IIA
- High-fidelity wheel control and thruster momentum dumping available

4.1.6.2 Satellite ACS Design. The STSim satellite ACS replicates the thruster control system on-board the GPS Block IIA, i.e., the STSim controller has the same architecture, controller gains, difference equations, and sample rates. A top-level block diagram of the control law architecture as implemented in the Jet Control Logic module is depicted in Figure 12.

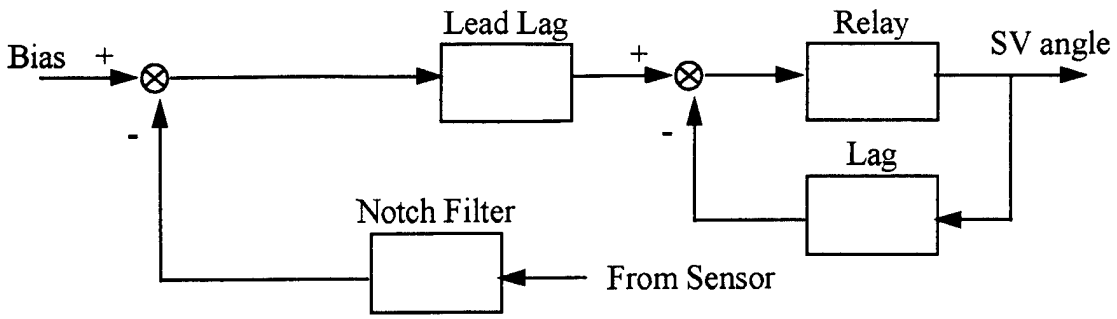
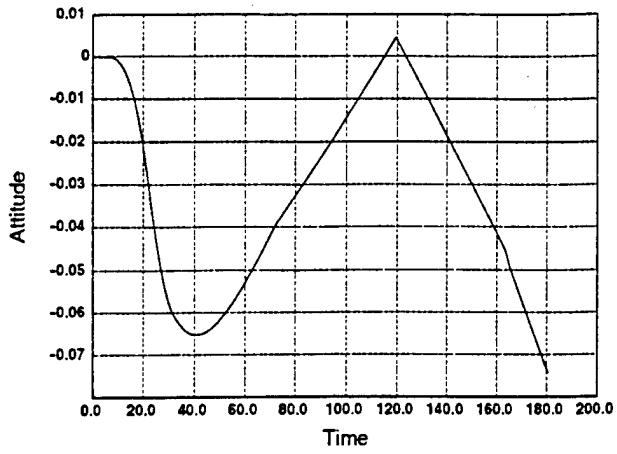


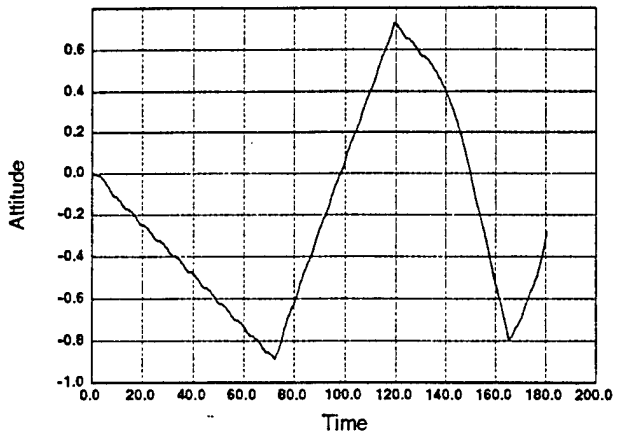
Figure 12. Satellite ACS control law architecture.

The outputs of the thruster controller are on/off commands for each satellite axis. These logical commands are converted to specific thruster commands in the Jet Select Logic module.

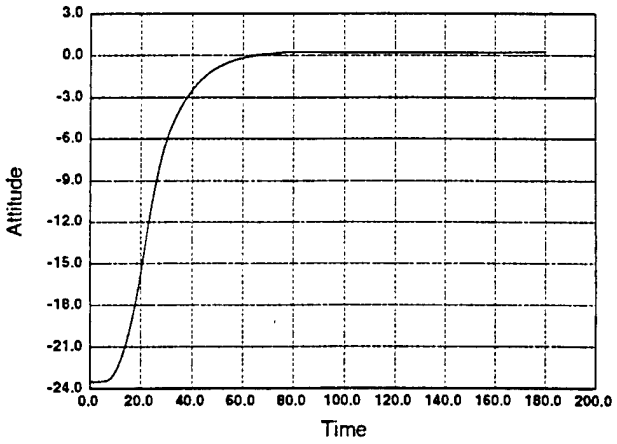
4.1.6.3 Satellite ACS Results. Results of a typical initial capture of the satellite are depicted in Figures 13 through 15. The initial roll and pitch angles of the satellite are zero and required no correction. The initial yaw angle of -23.5 degrees required controller action (Fig. 13). The yaw command was set to one to cause the satellite to rotate in the +yaw direction (i.e., about the +z axis). At approximately 20 seconds, a series of -yaw commands were issued to slow and eventually null the yaw rotation (Fig. 14). Selected thruster commands are depicted in Figure 15.



(a) Satellite attitude - roll.

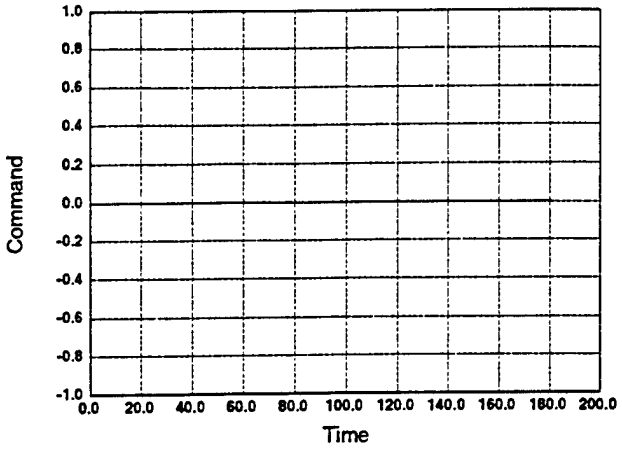


(b) Satellite attitude - pitch.

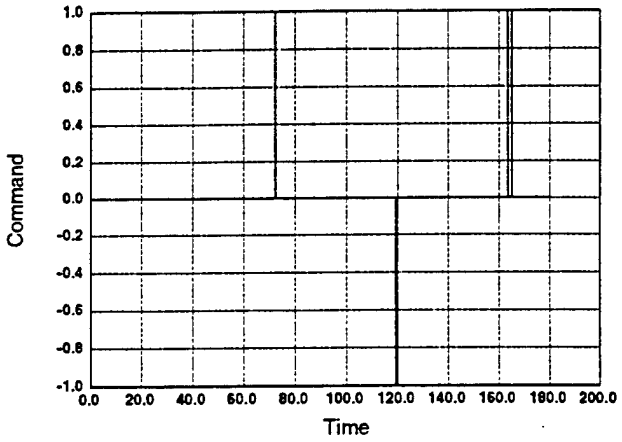


(c) Satellite attitude - yaw.

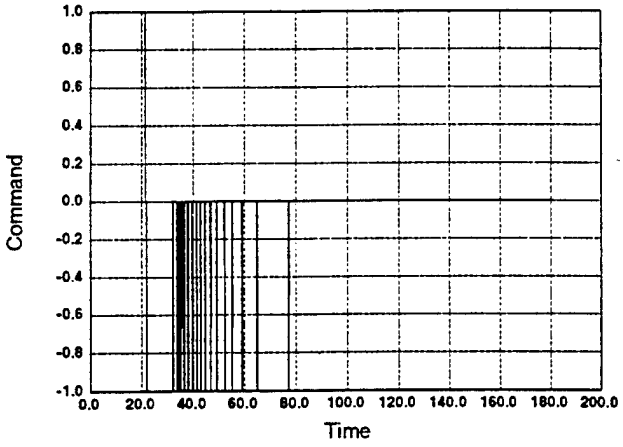
Figure 13. Satellite attitude - initial capture.



(a) Roll command.

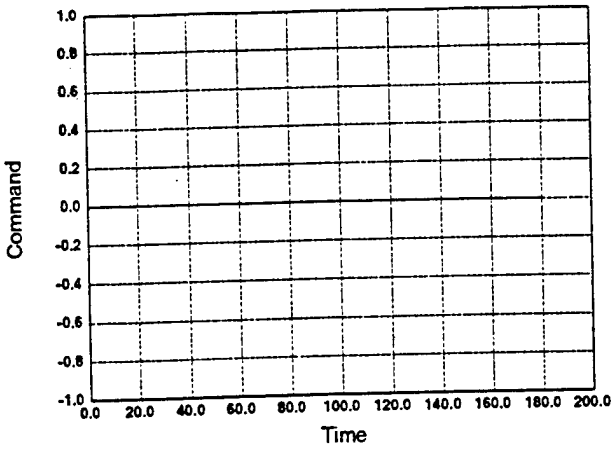


(b) Pitch command.

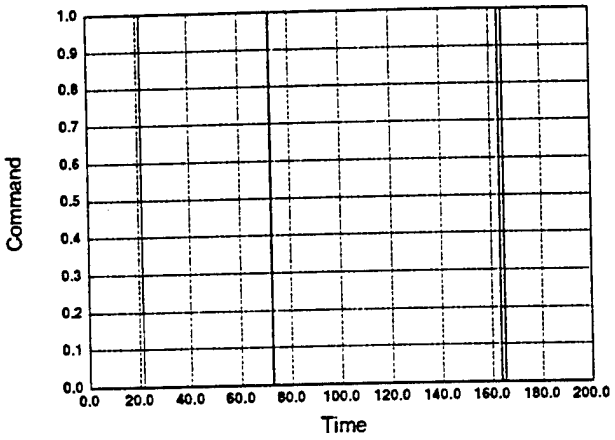


(c) Yaw command.

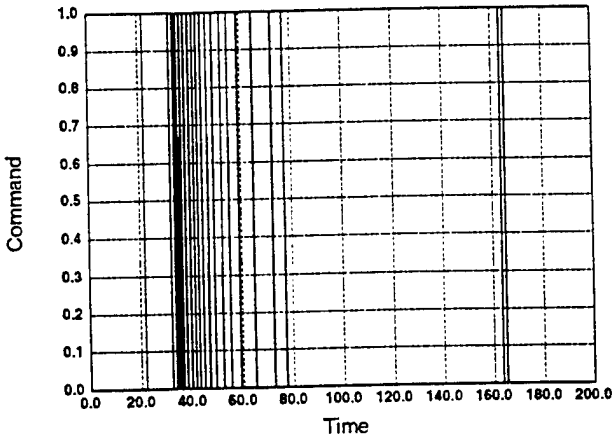
Figure 14. Satellite control commands - initial capture.



(a) Thruster #1 command.



(b) Thruster #6 command.



(c) Thruster #5 command.

Figure 15. Satellite thruster commands - initial capture.

The satellite pitch angle slowly drifts off null as the satellite propagates in its orbit. At approximately 70 seconds, the pitch angle exceeds the deadband value of .8 degrees and the satellite continues in a limit cycle as indicated by the attitude and thruster commands (Figs. 13b, 14b, 15b). The roll angle never exceeded the deadband value and therefore required no control action (Figs. 13a, 14a, 15a).

4.1.7 Satellite Propulsion Subsystem

4.1.7.1 Satellite Propulsion Subsystem Highlights. The satellite propulsion subsystem has the following features:

- Responds to changes in pressure, temperature, and mass of each propellant tank
- Responds to all latch valve commands and connectivity
- Determines thruster force as a function of propellant tank pressure and temperature

4.1.7.2 Satellite Propulsion Subsystem Design. The satellite propulsion subsystem model duplicates the architecture of the actual Block IIR system (Fig. 16). In particular, two tanks, four latch valves, and 16 thrusters are modeled. The characteristics of each of these components is described in the propulsion subsystem highlights listed above. The location and orientation of each thruster corresponds to Block IIR. All thrusters models inherited the FreeBody class, thereby making determination of thruster orientation and the effects of thruster forces and torques straightforward.

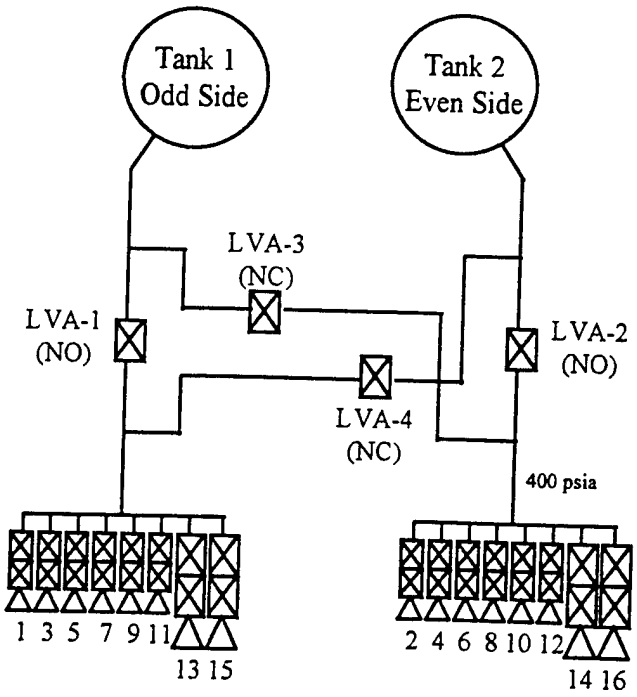
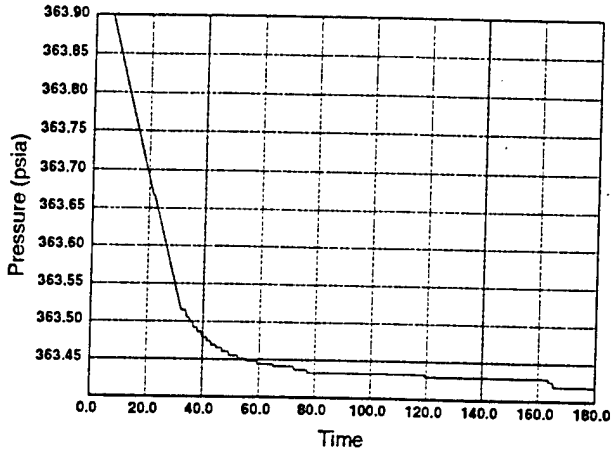
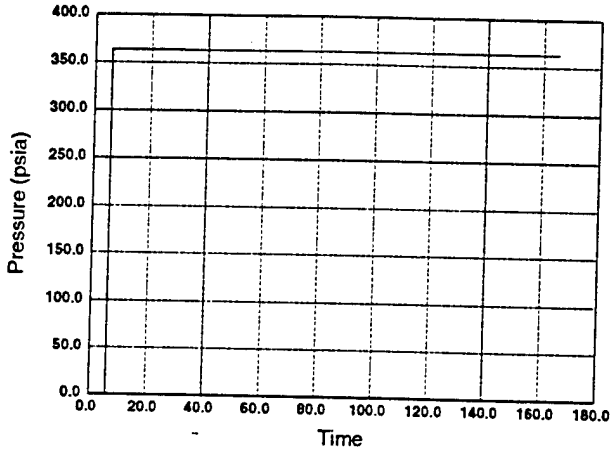


Figure 16. Satellite propulsion subsystem model.

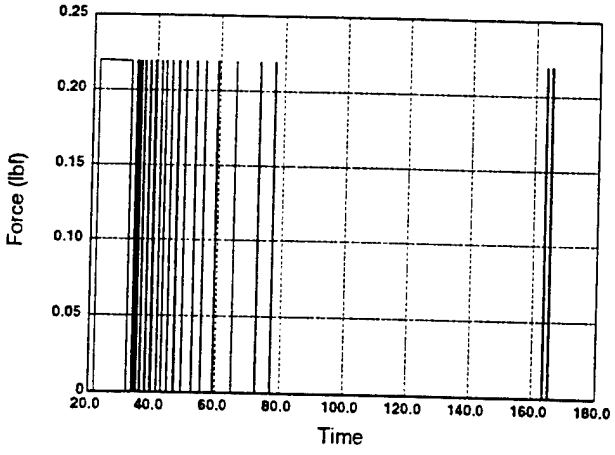
4.1.7.3 Satellite Propulsion Subsystem Results. The thruster results of the initial capture scenario portrayed in the ACS section (Section 4.1.6) are depicted in Figure 17. As the thruster pulses, the tank pressure is drawn down a small amount (note the scale of the axis). The pressure variation is not noticeable from the latch valve pressure scale. The actual thrust is approximately .22 lbf and corresponds the propellant tank pressure.



(a) Tank 1 pressure.



(b) Latch valve 1 pressure.



(c) Thruster #2 force.

Figure 17. Satellite thruster output - initial capture.

4.1.8 Satellite Optical Sensor Payload

4.1.8.1 Satellite Optical Sensor Payload Highlights. The satellite optical sensor payload model has the following features:

- Generates sensor field of view image information
- Commandable horizontal and vertical offset
- Optical characteristics are configurable (i.e., beam diameter at earth)
- Graphical representation of field of view

4.1.8.2 Satellite Optical Sensor Payload Design. The purpose of the payload on-board the STSim satellite was to demonstrate an architecture which could support an experiment which required a ground controlled optical sensor experiment. As such, the STSim satellite sensor model is not high-fidelity. Sensor position and orientation resulting from commands from the ground are transmitted to the command center; focal plane data is not transmitted. Higher fidelity sensor models can be quickly substituted for other applications due to the object-oriented nature of the STSim satellite model.

The class and object hierarchy of the optical sensor payload is depicted in Figure 18. As with other objects which require position and orientation information, the sensor inherits from the FreeBody class.

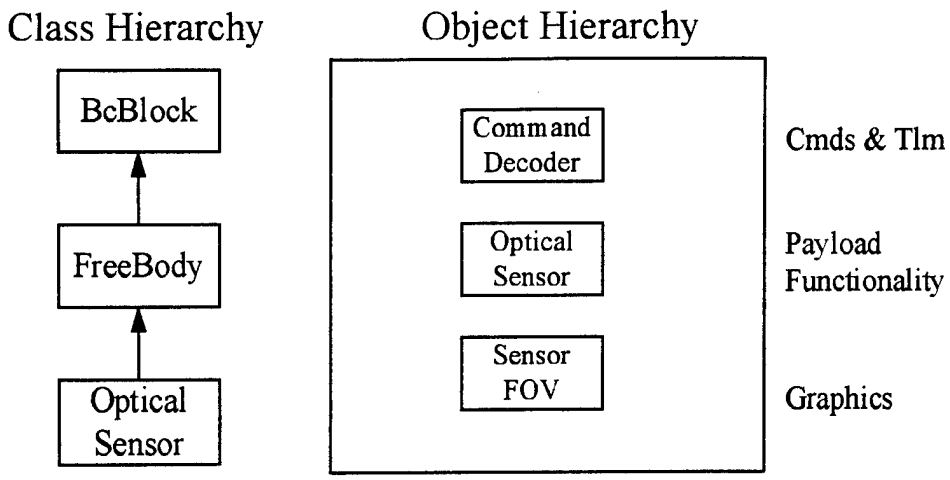


Figure 18. Satellite payload class/object hierarchy.

4.1.8.3 Satellite Optical Sensor Payload Results. The results of the optical sensor payload were demonstrated at the final briefing. Based on azimuth and elevation commands from the ground, the sensor reoriented and the corresponding sensor field of view was portrayed in the command center on the ground. Due to the visual and dynamic nature of the demonstration, no effort is made to portray the results in this report.

4.2 STSim COMMUNICATIONS NETWORK

4.2.1 Communications Network Highlights

The STSim communications network model has the following features:

- Based on BCCom, high-fidelity message-based modeling tool
- Contains satellite, FAFB relay, and PL nodes
- Processes commands, telemetry, and payload messages
- Includes message-based features, e.g., protocols, routing, buffers, etc.
- Menu-driven and postprocessing graphics

4.2.2 Communications Network Design

Since the fundamental purpose of this program was to demonstrate a capability, the communications network model was kept as simple as possible. The network model was developed using BCCom and supported both analysis and realtime operator-in-the-loop modes of operation. The three nodes in the system modeled message processing at the PL command center, the FAFB relay node, and the STSim satellite. Both bus and payload commands were transmitted from the command center to the satellite; bus and payload telemetry were transmitted from the satellite to the command center. More sophisticated communications networks can be, and have been, developed by adding nodes and/or processes at the nodes.

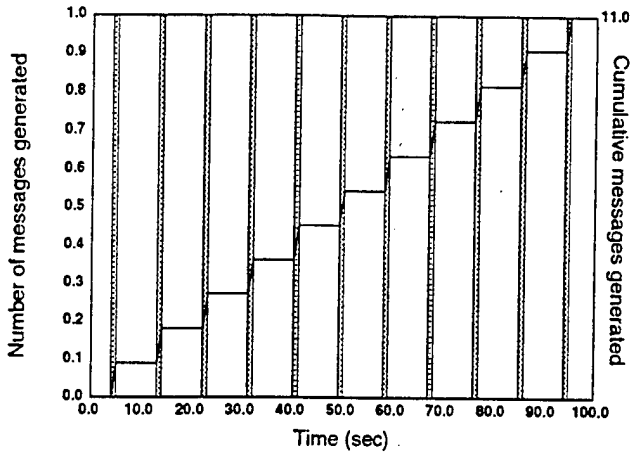
4.2.3 Communications Network Results

BCCom has a rich set of postprocessing graphics which are available for both the analysis and operator-in-the-loop operations. A brief summary of a short simulation run of the STSim communications network model is depicted in Table 1 and Figures 19 through 21. For this particular scenario, 11 bus commands were generated at the PL command center and transmitted through FAFB to the satellite. Eleven telemetry messages were also generated at the satellite payload and bus subsystems. Bus telemetry was transmitted through FAFB to PL while payload telemetry was sent directly to PL. All messages were generated at constant intervals.

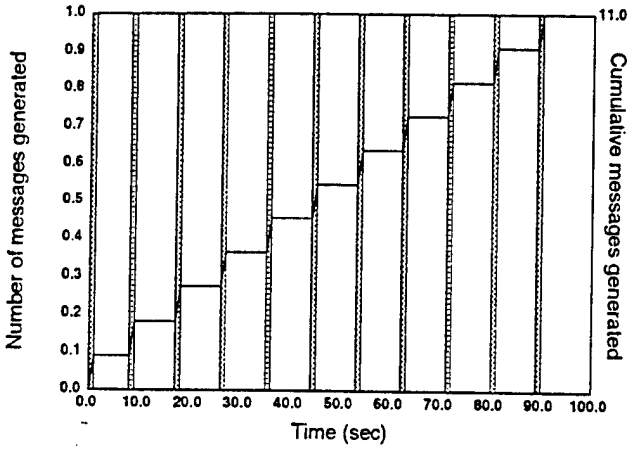
The summary of the message flow indicates the number of messages generated, the nodes these messages were transmitted to, and the average transmission times (Table 1). Note that the SV node corresponds to the satellite bus node and the S node corresponds to the satellite payload node. The message generation profile shows the message generation intervals and the cumulative number of messages generated for each node (Fig. 19). The average transmission times for each message indicates that the messages were quickly transmitted and that there was no noticeable message backup (Fig. 20). Finally, the time history file traces each message as it is processed through each layer within each node (Fig. 21). The time history file provides valuable information for the purpose of network model verification.

Table 1. Communications Network Message Flow Summary.

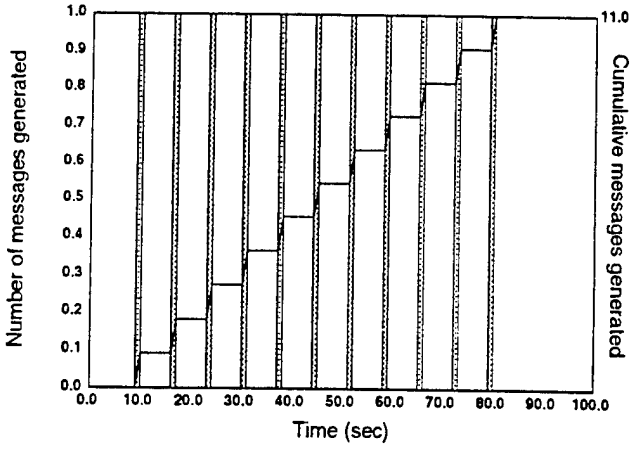
Source Node	Number of Messages Generated	Destination Node	Number of Messages Received	Average Time
PL	11	FAL	11	0.1333E-01
		SV	11	0.1165
SV	11	FALCON	11	0.1941
		PL	11	0.2529
S	11	PL	11	0.8423E-01



(a) Messages generated at node SV.

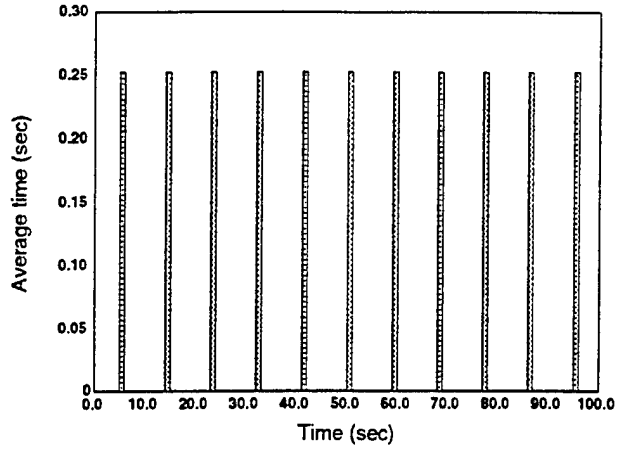


(b) Messages generated at node S.

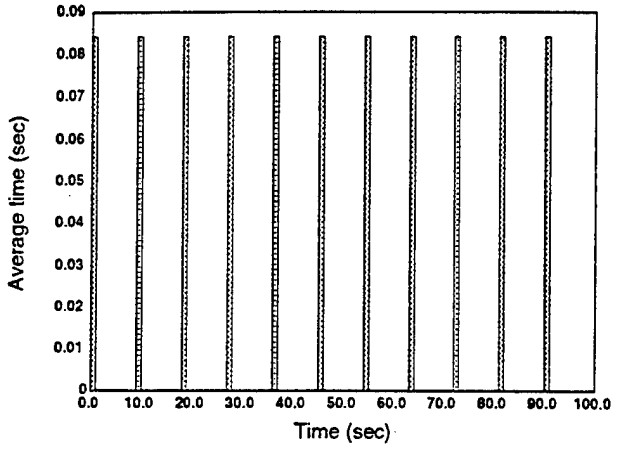


(c) Messages generated at node PL.

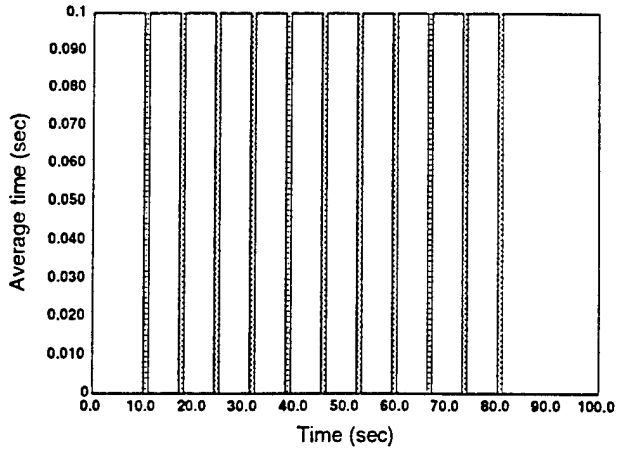
Figure 19. Communications network message generation.



(a) Average transmission time from SV to PL.



(b) Average transmission time from S to PL.



(c) Average transmission time from PL to SV.

Figure 20. Communications network average transmission times.

XXX.RUN Generated by BCCom (BCSi) 06-Jul-95 14:28:17

Time	Id	Node/Link	Process	Event
0.00000	0	S	NET	Generated PAYLOAD
0.00000	0	S	NET	Inserted msg in buffer
0.00000	0	S	NET	Message left buffer
0.00300	0	S	DATAPL	Inserted msg in buffer
0.00300	0	S	DATAPL	Transmitted message
0.00300	0	S	DATAPL	Message left buffer
0.00300	0	S	NET	Deleted msg from buffer
0.00600	0	S_PL		Successful transmission
0.00600	0	S	DATAPL	Deleted msg from buffer
0.08426	0	PL	PHYSFMSV	Received msg at node0
0.08426	0	PL	PHYSFMSV	Received msg at sink
5.00000	1	SV	NET	Generated TELEMETRY
5.00000	1	SV	NET	Inserted msg in buffer
5.00000	1	SV	NET	Message left buffer
5.05729	1	SV	DATA2FAL	Inserted msg in buffer
5.05729	1	SV	DATA2FAL	Transmitted message
5.05729	1	SV	DATA2FAL	Message left buffer
5.05729	1	SV	NET	Deleted msg from buffer
5.11458	1	SV_FALCON		Successful transmission
5.11458	1	SV	DATA2FAL	Deleted msg from buffer
5.19408	1	FALCON	PHYS2SV	Received msg at node
5.19408	1	FALCON	PHYS2SV	Received msg at sink
5.19408	1	FALCON	NET	Inserted msg in buffer
5.19408	1	FALCON	NET	Message left buffer
5.25138	1	FALCON	DATA2PL	Inserted msg in buffer
5.25138	1	FALCON	DATA2PL	Transmitted message
5.25138	1	FALCON	DATA2PL	Message left buffer
5.25138	1	FALCON	NET	Deleted msg from buffer
5.25293	1	PL_FALCON		Successful transmission
5.25293	1	PL	PHYSFMFA	Received msg at node
5.25293	1	PL	PHYSFMFA	Received msg at sink1
5.25293	1	FALCON	DATA2PL	Deleted msg from buffer

Figure 21. Communications network time history file.

4.3 STSim COMMAND CENTER

4.3.1 Command Center Highlights

The STSim command center manages both satellite bus and payload commands/telemetry. The STSim command center bus model has the following features:

- Generates GPS Block IIR command stream for SV
- Decodes and displays GPS Block IIR telemetry stream
- Includes command database (343 discrete and 181 serial message commands)
- Sends/receives actual bit formats (excluding encryption)
- User friendly displays for entering commands (by mnemonic or cmd ID) or viewing telemetry
- Includes telemetry master frame database (5968 items)
- Displays telemetry frames major/minor frame number and the contents on hexadecimal byte format
- Displays a sample telemetry view (i.e., roll, pitch, yaw)
- Records commands sent and view telemetry received to log files and telemetry screens

The STSim command center payload model has the following features:

- Supports operator-in-the-loop
- Processes focal plane position and orientation data for SV
- Other BCSi simulation applications have processed actual focal plane pixel data
- Forward user HCI uses BCSi command center software (i.e., readily changeable formats and data processing)
- Supports 2-D and 3-D graphics

4.3.2 Command Center Design

The design of the PL command center is a near mirror image of the satellite TT&C subsystem described in Section 4.1.5 (Fig. 22). The user generates the desired command via the command center HCI. The HCI uses the command database (the same one used on-board the satellite) to convert the command integer to the appropriate 20-bit command. The command transmitter sends the command to the satellite via the STSim communications network model.

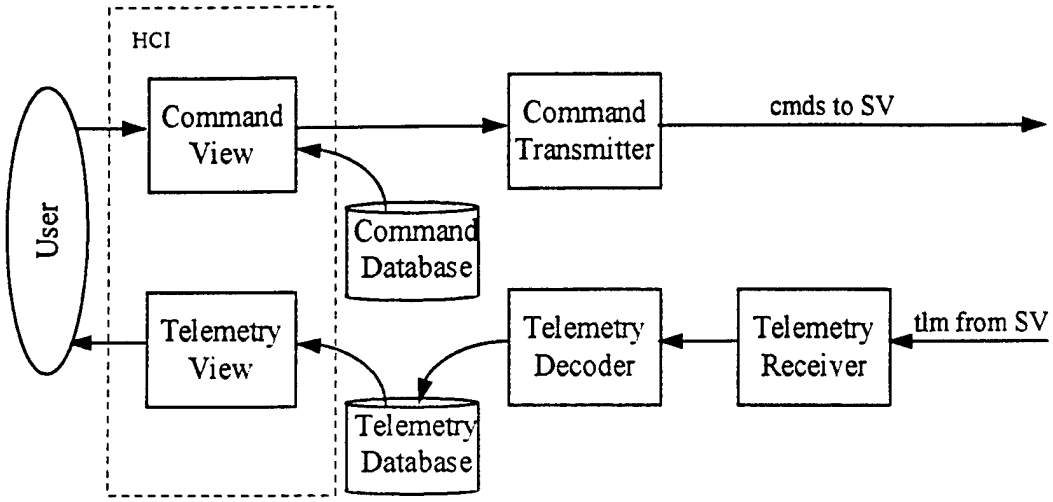


Figure 22. STSim command center design.

Telemetry from the satellite arrives at the telemetry receiver and is decoded using the telemetry database (again, the same database as used on-board the satellite). The telemetry database is also used to drive the telemetry screens at the command center.

The satellite payload telemetry is interpreted on the ground and the corresponding sensor viewpoint is displayed on the forward user console along with time, satellite position, and viewpoint information.

4.3.3 Command Center Results

Command center screens display the main window, command views, satellite bus telemetry, and forward-user payload telemetry. The command center main window consists of four pull-down menus across the top, simulation scenario status information, write message buttons, and a text window (Fig. 23). Command and telemetry screens are accessed from the pull-down menus. The scenario status information is self-explanatory. The write message buttons allow the operator to monitor message generation either by viewing information in the text window or in the log files.

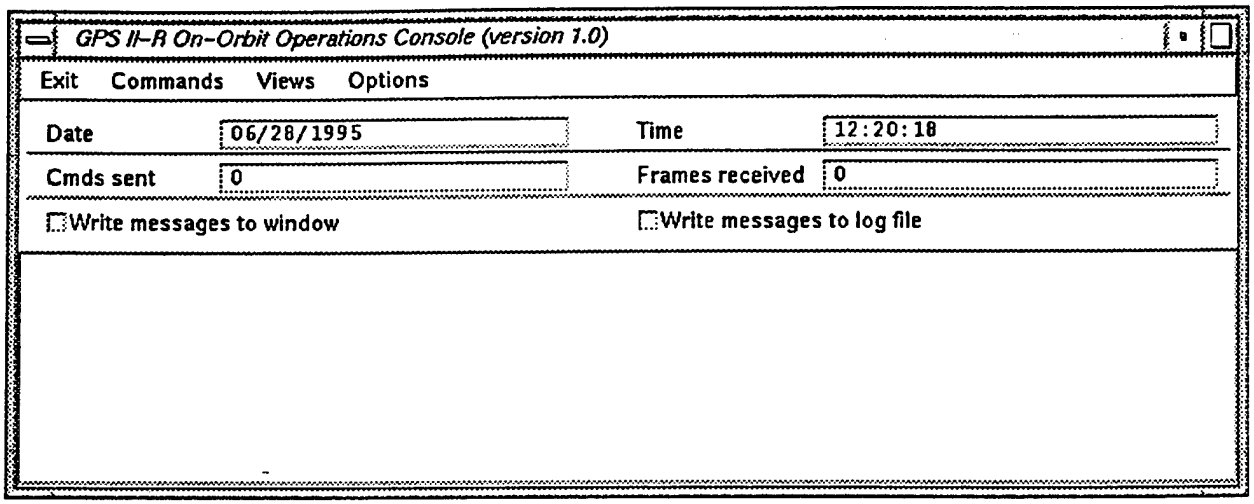


Figure 23. Command center main window.

Command views exist for both discrete and serial message commands (Figs 24 and 25). Both screens are supported by the commands database, i.e., when either the command mnemonic or command integer is entered, information such as command description, octal code, and parameter description is automatically filled in. Buttons are included for transmitting the command and closing the window.

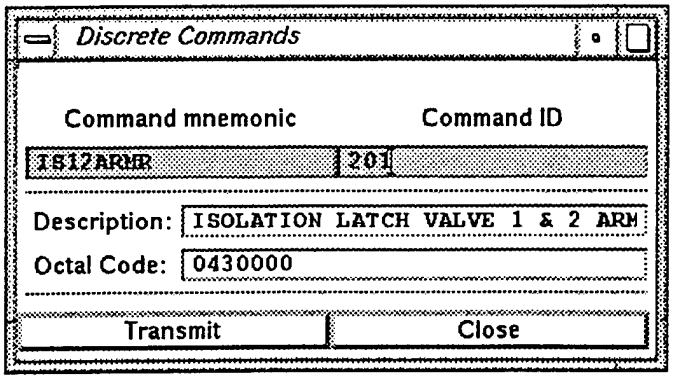


Figure 24. Command center discrete command view.

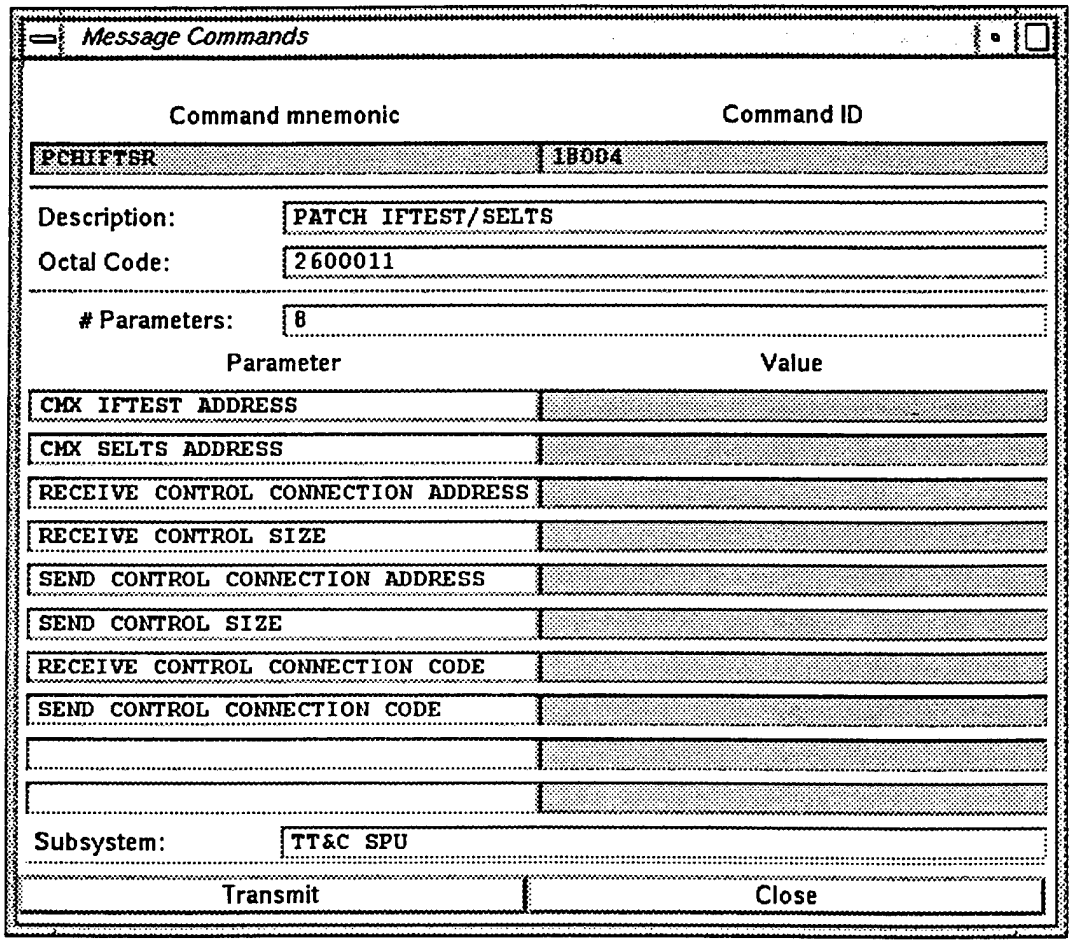


Figure 25. Command center serial message command view.

The telemetry frame view allows the operator to view the bytes of each telemetry frame as they are received (Fig. 26). Another telemetry screen allows the operator to view the values of a few selected telemetry measurands. Additional telemetry screens with various screen formats can be easily created with the BCCmdCtr software.

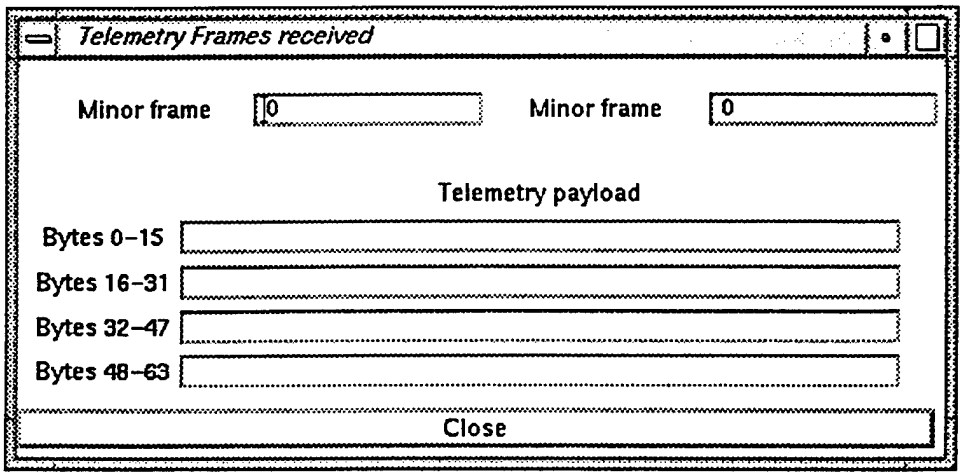


Figure 26. Command center telemetry frame view.

The command center forward user main view portrays the on-board sensor view (Fig. 27). This view is derived from the sensor and satellite position/orientation telemetry. Actual focal plane data has been transmitted in support of other projects, such a capability can be easily added to STSim.

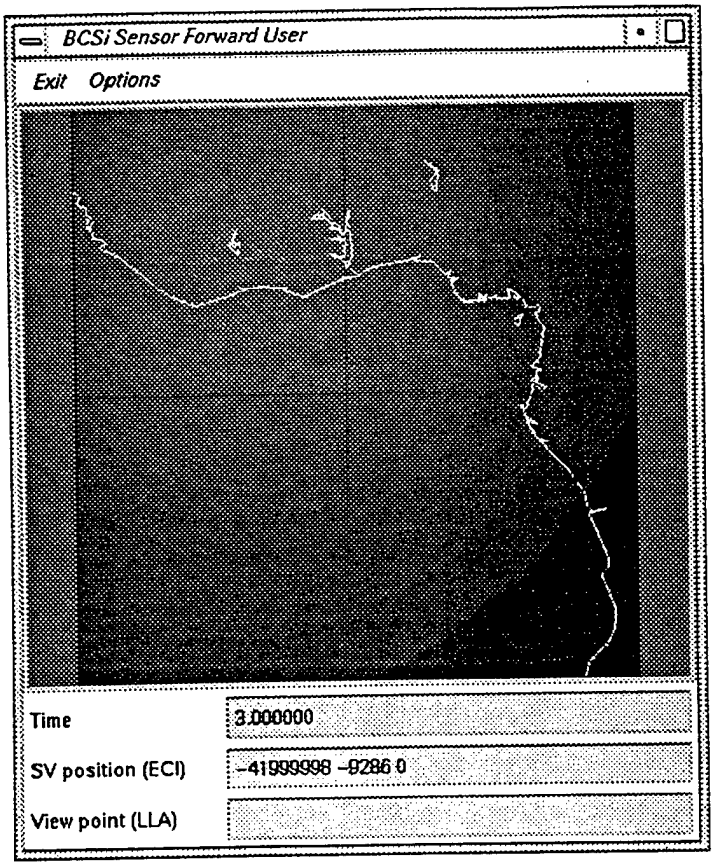


Figure 27. STSim forward user sensor viewpoint.

4.4 STSim OPTIONAL CAPABILITIES

Several BCSi simulation environment capabilities, in addition to those in the current version of STSim, have been developed as part of other simulation projects (Refs. 2,3,4). A brief listing of the highlights of threat/launch vehicle, transmission medium, and proctor options follows.

4.4.1 Threat/Launch Vehicle Option

The threat/launch vehicle segment of the BCSi simulation environment has the following features:

- Simulates a salvo of missiles
- Displays scenario in color 3-D graphics

- Loads different missile scenarios from threat input file
- Threat file is created using a dedicated off-line 3-D graphical environment
- Individual multiple-stage missiles are defined by user (e.g., mass, exit velocity, ...)
- Each missile can carry multiple re-entry vehicles
- Missiles are targeted by setting launch coordinates, pitch maneuver, and stage burn times
- Missiles may be used as satellite launch vehicles

4.4.2 Transmission Medium Option

The transmission medium segment of the BCSi simulation environment has the following features:

- Supports connectivity between "emitters" and "receivers"
- Supplies array of course filtered emitters which are within the line of sight of the requesting receiver
- Architecture supports bi-directional calculations of power from a specific emitter to receiver

4.4.3 Proctor Option

The proctor segment of the BCSi simulation environment has the following features:

- Realtime anomaly inputs to satellite and/or communications network
- Provides realtime contingency planning
- May be initiated/terminated any time during scenario
- Monitors operator actions
- Stores inputs for later playback

5.0 SUMMARY

As demonstrated during the Final Briefing, the STSim simulation environment achieved the specified requirements. In particular, the STSim environment:

- Supports PL assets
- Supports software development phases
- Uses BCSi software tools, procedures, and infrastructure
- Supports analysis and realtime operations
- Has flexible scope and level of fidelity
- Utilizes object-oriented techniques

In short, STSim can be a valuable tool in the support of definition, acquisition, and operation of PL space experiments.

6.0 RECOMMENDATIONS

Recommendations regarding STSim future work follow:

- Expand the utility of the software to the mission and campaign level by using an open architecture which will allow integration with standard protocols such as DIS (Distributed Interactive Simulation) and ADS (Advanced Distributed Simulation).

- Provide a user friendly interface and detailed user documentation to allow third party module C++ software development by engineers.

- Expend the modularity of the software to allow the exchange of software modules with associated hardware modules, thereby providing a framework for building a Hardware in the Loop (HIL) capability.

- Develop a strategy for validating the simulation model against real flight data, e.g., payload, bus subsystems, and /or mission operations.

- Use STSim to provide support to a PL space experiment. The specific nature of the support would depend on the space experiment phase of development, i.e., definition, acquisition, or operations.

REFERENCES

1. Baer, C.A., et al, BCSim User's Manual, BCSi-95-751071-002, BCSi, Inc., Colorado Springs, CO., July 1995.

2. Baer, C.A., et al, Space Systems Technology Simulation (SSTSim) Final Report (draft), BCSi-95-410014-001, BCSi, Inc., Colorado Springs, CO., June 1995.

3. Baer, C.A., et al, Global Positioning System Simulation (GPSSim) Executive Summary, BCSi-93-751071-001, BCSi, Inc., Colorado Springs, CO., June 1993.

4. Baer, C.A., et al, Defense Satellite Communications System (DSCS) Simulation, RDA-TR-18-0307-0001-001, RDA Logicon, Colorado Springs, CO., February 1993.

APPENDIX A

GPS IIR DISCRETE COMMAND BY COMMAND NUMBER TABLE

					Command Bit Definitions				Telemetry Verification (MAF/MIF/WRD/BIT)	
Cmd No.	Mnemonic	S/S	Comp	Command Description	CMD Type	CMD Class	20 Bit OCTAL	10 Bit HEX	TLM 0	TLM 1
101	ESA1OFFR	ADS	ESA	ESA-1 OFF	D		0416100	071		A/4/10/0
102	ES1ONR	ADS	ESA	ESA-1 ON/HCI-1 OFF	D		0412500	055	A/4/10/1	
103	HC1ONHIR	ADS	ESA	HCI-1 ON HIGH SPIN RATE	D		0410700	047	A/4/10/2	
104	HC1ONLOR	ADS	ESA	HCI-1 ON LOW SPIN RATE	D		0414300	063		A/4/10/2
105	ESA2OFFR	ADS	ESA	ESA-2 OFF	D		0417000	078		A/4/11/0
106	ES2ONR	ADS	ESA	ESA-2 ON/HCI-2 OFF	D		0413400	05C	A/4/11/1	
107	HC2ONHIR	ADS	ESA	HCI-2 ON HIGH SPIN RATE	D		0411600	04E	A/4/11/2	
108	HC2ONLOR	ADS	ESA	HCI-1 ON LOW SPIN RATE	D		0415200	06A		A/4/11/2
109	FSSOFFR	ADS	FSS	FSS-1 AND 2 OFF	DR		0432501	0D5	A/3/16/6	
110	FSS2ONR	ADS	FSS	FSS-2 ON/FSS-1 OFF	DR		0431601	0CE	A/3/16/6	A/4/16/6
111	FSS1ONR	ADS	FSS	FSS-1 ON/FSS-2 OFF	DR		0430701	0C7	A/4/16/6	A/3/16/6
112	RWA1OFFR	ADS	RWA	RWA 1 (ROLL-YAW) OFF	D		0412600	056		
113	RWA1ONR	ADS	RWA	RWA 1 (ROLL-YAW) ON	D		0413501	05D		
114	RWA2OFFR	ADS	RWA	RWA 2 (PITCH-YAW) OFF	D		0414401	064		
115	RWA2ONR	ADS	RWA	RWA 2 (PITCH-YAW) ON	D		0415301	06B		
116	RWA3OFFR	ADS	RWA	RWA 3 (ROLL-YAW) OFF	D		0416200	072		
117	RWA3ONR	ADS	RWA	RWA 3 (ROLL-YAW) ON	D		0417101	079		
118	RWA4OFFR	ADS	RWA	RWA 4 (PITCH-YAW) OFF	D		0410501	045		
119	RWA4ONR	ADS	RWA	RWA 4 (PITCH-YAW) ON	D		0411701	04F		
120	RMAPOFFR	ADS	RMA	RMA PITCH GYRO 1 & 2 OFF	DR		0432400	0D4		
121	RMAP2ONR	ADS	RMA	RMA PITCH GYRO 2 ON/1 OFF	DR		0431501	0CD	A/1/16/0	A/2/16/0
122	RMAP1ONR	ADS	RMA	RMA PITCH GYRO 1 ON/2 OFF	DR		0430600	0C6	A/2/16/0	A/1/16/0
123	RMAROFFR	ADS	RMA	RMA ROLL GYRO 1 & 2 OFF	DR		0432601	0D6		
124	RMAR2ONR	ADS	RMA	RMA ROLL GYRO 2 ON/1 OFF	DR		0431700	0CF	A/1/16/4	A/2/16/4
125	RMAR1ONR	ADS	RMA	RMA ROLL GYRO 1 ON/2 OFF	DR		0430500	0C5	A/2/16/4	A/1/16/4
126	RMAYOFFR	ADS	RMA	RMA YAW GYRO 1 & 2 OFF	DR		0434001	0E0		
127	RMAY2ONR	ADS	RMA	RMA YAW GYRO 2 ON/1 OFF	DR		0433101	0D9	A/3/16/2	A/4/16/2
128	RMAY1ONR	ADS	RMA	RMA YAW GYRO 1 ON/2 OFF	DR		0432200	0D2	A/4/16/2	A/3/16/2
129	RMA1LOR	ADS	RMA	RMA PRIMARY LOW RATE ON	D		0427701	0BF	A/7/64/5	
130	RMA1HIR	ADS	RMA	RMA PRIMARY HIGH RATE ON	D		0427600	0BE		A/7/64/5
131	RMA2LOR	ADS	RMA	RMA REDUNDANT LOW RATE ON	D		0447701	13F	A/8/64/5	
132	RMA2HIR	ADS	RMA	RMA REDUNDANT HIGH RATE ON	D		0447600	13E		A/8/64/5
133	PCFDISR	ADS	MTC	PTC FWD DISABLE	DR		0434100	0E1	A/1/16/5	
134	PCFENAR	ADS	MTC	PTC FWD ENABLE	DR		0433000	0D8		A/1/16/5
135	PCRDISR	ADS	MTC	PTC REV DISABLE	DR		0435201	0EA	A+J66/2/16/5	
136	PCRENAR	ADS	MTC	PTC REV ENABLE	DR		0433300	0DB		A/2/16/5
137	PCSDISR	ADS	MTC	PTC SPARE DISABLE	DR		0435600	0EE	A/3/16/5	
138	PCSENAR	ADS	MTC	PTC SPARE ENABLE	DR		0436101	0F1		A/3/16/5
139	PCSFWDR	ADS	MTC	PTC SPARE COIL TO FORWARD MODE	DR		0433500	0DD		A/4/64/6

140	PCSREVR	ADS	MTC	PTC SPARE COIL TO REVERSE MODE	DR		0434400	0E4	A/4/64/6	
141	RYCFDISR	ADS	MTC	RYC FWD DISABLE	DR		0433600	0DE	A/1/16/1	
142	RYCFENAR	ADS	MTC	RYC FWD ENABLE	DR		0432700	0D7		A/1/16/1
143	RYCRDISR	ADS	MTC	RYC REV DISABLE	DR		0434501	0E5	A/2/16/1	
144	RYCRENAR	ADS	MTC	RYC REV ENABLE	DR		0435401	0EC		A/2/16/1
145	RYCSDISR	ADS	MTC	RYC SPARE DISABLE	DR		0436300	0F3	A/3/16/1	
146	RYCSENAR	ADS	MTC	RYC SPARE ENABLE	DR		0432301	0D3		A/3/16/1
147	RYCSFWDR	ADS	MTC	RYC SPARE COIL TO FORWARD MODE	DR		0433401	0DC		A/4/64/7
148	RYCSREVR	ADS	MTC	RYC SPARE COIL TO REVERSE MODE	DR		0434301	0E3	A/4/64/7	
201	IS12ARMR	RCS	LV	ISOLATION LATCH VALVE 1 & 2 ARM	DR	CC	0430000	0C0		A/6/16/0
202	IS12DARR	RCS	LV	ISOLATION LATCH VALVE 1 & 2 DISARM	DR		0435300	0EB	A/6/16/0	
203	XS34ARMR	RCS	LV	XSTRAP LATCH VALVE 3 & 4 ARM	DR	CC	0431400	0CC		A/6/16/4
204	XS34DARR	RCS	LV	XSTRAP LATCH VALVE 3 & 4 DISARM	DR		0433701	0DF	A/6/16/4	
205	IS12ENAR	RCS	LV	ISOLATION LATCH VALVE 1 & 2 ENABLE	DR		0437100	0F9		A/5/16/0
206	IS12DISR	RCS	LV	ISOLATION LATCH VALVE 1 & 2 DISABLE	DR		0436201	0F2	A/5/16/0	
207	XS34ENAR	RCS	LV	XSTRAP LATCH VALVE 3 & 4 ENABLE	DR		0436401	0F4		A/5/16/4
208	XS34DISR	RCS	LV	XSTRAP LATCH VALVE 3 & 4 DISABLE	DR		0437301	0FB	A/5/16/4	
209	ISO1OPNR	RCS	LV	ISOLATION LATCH VALVE 1 OPEN	DR		0436600	0F6	A/5/64/0	A/6/64/0
210	ISO1CLSR	RCS	LV	ISOLATION LATCH VALVE 1 CLOSE	DR		0435701	0EF	A/6/64/0	A/5/64/0
211	ISO2OPNR	RCS	LV	ISOLATION LATCH VALVE 2 OPEN	DR		0436500	0F5	A/5/64/1	A/6/64/1
212	ISO2CLSR	RCS	LV	ISOLATION LATCH VALVE 2 CLOSE	DR		0437601	0FE	A/6/64/1	A/5/64/1
213	XST3OPNR	RCS	LV	XSTRAP LATCH VALVE 3 OPEN	DR		0435000	0E8	A/5/64/2	A/6/64/2
214	XST3CLSR	RCS	LV	XSTRAP LATCH VALVE 3 CLOSE	DR		0434700	0E7	A/6/64/2	A/5/64/2
215	XST4OPNR	RCS	LV	XSTRAP LATCH VALVE 4 OPEN	DR		0437200	0FA	A/5/64/3	A/6/64/3
216	XST4CLSR	RCS	LV	XSTRAP LATCH VALVE 4 CLOSE	DR		0436000	0F0	A/6/64/3	A/5/64/3
217	EVENENAR	RCS	REA	REA EVEN SYS PWR ENABLE	D	CC	0441000	108	A/6/10/4	
218	EVENDISR	RCS	REA	REA EVEN SYS PWR DIS	D		0425601	0AE		A/6/10/4
219	EVCBHONR	RCS	REA	REA EVEN SYS C-B HEATERS ON	D		0421500	08D	A/6/10/3	
220	EVCBHOFR	RCS	REA	REA EVEN SYS C-B HEATER OFF	D		0424500	0A5		A/6/10/3
221	EV2XARMR	RCS	REA	REA EVEN 0.2LB X ARM	D		0421101	089	A/6/10/0	
222	EV2XDISR	RCS	REA	REA EVEN 0.2LB X DISARM	D		0424401	0A4		A/6/10/0
223	EV2YARMR	RCS	REA	REA EVEN SYS 0.2LB Y ARM	D		0610000	040	A/6/10/1	
224	EV2YDISR	RCS	REA	REA EVEN SYS 0.2LB Y DISARM	D		0425501	0AD		A/6/10/1
225	EV5ZARMR	RCS	REA	REA EVEN SYS 5LB Z ARM	D	CC	0440400	104	A/6/10/2	
226	EV5ZDISR	RCS	REA	REA EVEN SYS 5LB Z DISARM	D		0422600	096		A/6/10/2
227	ODDENAR	RCS	REA	REA ODD SYS PWR ENABLE	D	CC	0430401	0C4	A/6/11/4	
228	ODDDISR	RCS	REA	REA ODD SYS PWR DISABLE	D		0431301	0CB		A/6/11/4
229	ODCBHONR	RCS	REA	REA ODD SYS C-B HEATERS ON	D		0432100	0D1	A/6/11/3	
230	ODCBHOFR	RCS	REA	REA ODD SYS C-B HEATERS OFF	D		0431100	0C9		A/6/11/3
231	OD2XARMR	RCS	REA	REA ODD SYS 0.2LB X ARM	D		0437400	0FC	A/6/11/0	
232	OD2XDISR	RCS	REA	REA ODD SYS 0.2LB X DISARM	D		0437700	0FF		A/6/11/0
233	OD2YARMR	RCS	REA	REA ODD SYS 0.2LB Y ARM	D		0612700	057	A/6/11/1	
234	0D2YDISR	RCS	REA	REA ODD SYS 0.2LB Y DISARM	D		0431200	0CA		A/6/11/1

235	OD5ZARMR	RCS	REA	REA ODD SYS 5LB Z ARM	D	CC	0431001	0C8	A/6/11/2	
236	OD5ZDISR	RCS	REA	REA ODD SYS 5 LB Z DISARM	D		0432001	0D0		A/6/11/2
301	SPUABONR	TT&C	SPU	SPU A & B PWR ON	D		0423301	09B		
302	SPUAONR	TT&C	SPU	SPU A PWR ON/SPU B PWR OFF	D		0427201	0BA		
303	SPUBONR	TT&C	SPU	SPU A PWR OFF/SPU B PWR ON	D		0426100	0B1		
304	SPUACNTR	TT&C	SPU	SPU A IN CONTROL OF I/O	D		0425700	0AF	A/7/10/4	A/7/11/4
305	SPUBCNTR	TT&C	SPU	SPU B IN CONTROL OF I/O	D		0426601	OB6	A/7/11/4	A/7/10/4
306	SPUARSTR	TT&C	SPU	SPU A CPU RESET, REBOOT	D		0426700	0B7		
307	SPUBRSTR	TT&C	SPU	SPU B CPU RESET, REBOOT	D		0427500	0BD		
308	SPAMNRMR	TT&C	SPU	SPU A MEMORY LO/HI NORM	D		0446001	130		A/7/10/2
309	SPAMSWPR	TT&C	SPU	SPU A MEMORY HI/LO SWAP	D		0447201	13A	A/7/10/2	
310	SPBMNRMR	TT&C	SPU	SPU B MEMORY LO/HI NORM	D		0447101	139		A/7/11/2
311	SPBMSWPR	TT&C	SPU	SPU B MEMORY HI/LO SWAP	D		0446501	135	A/7/11/2	
312	SPABIONR	TT&C	SPU	SPU A I/O ON & SPU B I/O ON	D		0447300	13B	A/7/10/6	
313	SPUAIONR	TT&C	SPU	SPU A I/O ON/SPU B I/O OFF	D		0445501	12D	A/7/10/6	A/7/11/6
314	SPUBIONR	TT&C	SPU	SPU A I/O OFF/SPU B I/O ON	D		0446400	134	A/7/11/6	A/7/10/6
315	SCPUNRMR	TT&C	SPU	SPU CPU I/O NORM	D		0423400	09C		A/7/10/3
316	SCPUXSTR	TT&C	SPU	SPU CPU I/O CROSS-STRAP	D		0427000	0B8	A/7/10/3	
317	SADAONR	TT&C	SPU	SPU A ADE PWR ON, SPU B ADE OFF	D		0424600	0A6	A/7/10/3	A/7/11/3
318	SADBONR	TT&C	SPU	SPU A ADE PWR OFF, SPU B ADE PWR ON	D		0426400	OB4	A/7/11/3	A/7/10/3
319	SADOFFR	TT&C	SPU	SPU ADE A AND B OFF	D		0423700	09F		A/3/10/3
320	TIUAONR	TT&C	TIU	TIU A PWR ON/TIU B PWR OFF	D		0436701	0F7		
321	TIUBONR	TT&C	TIU	TIU A PWR OFF/TIU B PWR ON	D		0437501	0FD		
322	GEDAONR	TT&C	GED	GED A ON	D		0420601	086	A/7/64/0	
323	GEDAOFR	TT&C	GED	GED A OFF	D		0421701	08F		A/7/64/0
324	GEDBONR	TT&C	GED	GED B ON	D		0423100	099	A/8/64/1	
325	GEDBOFR	TT&C	GED	GED B OFF	D		0425001	0A8		A/8/64/1
326	LLEDAONR	TT&C	LLED	LLED A ON	D		0424000	0A0	A/6/64/7	
327	LLEDAOFR	TT&C	LLED	LLED A OFF	D		0425100	0A9		A/6/64/7
328	LLEDBONR	TT&C	LLED	LLED B ON	D		0422201	092	A/8/64/4	
329	LLEDBOFR	TT&C	LLED	LLED B OFF	D		0421201	08A		A/8/64/4
330	PCEAONR	TT&C	PCE	PCE-A ON/PCE-B OFF	D		0447401	13C		
331	PCEBONR	TT&C	PCE	PCE-A OFF/PCE-B ON	D		0446301	133		
332	PCEOFFR	TT&C	PCE	PCE A & B OFF	D		0445200	12A		
333	KG1ONR	TT&C	KG	KG-46 1 ON/KG-46 2 OFF	DR		0440601	106	A/8/16/5	A/8/16/1
334	KG2ONR	TT&C	KG	KG-46 2 ON/KG-46 1 OFF	DR		0441500	10D	A/8/16/1	A/8/16/5
335	KGOFFR	TT&C	KG	KG-46 1 OFF/KG-46 2 OFF	DR		0442300	113	A/8/16/1	
336	COM1ONR	TT&C	SBT	S-BAND DOWNLINK 1 ON	DR		0440501	105		A/7/16/2
337	ATO1ONR	TT&C	SBT	S-BAND DOWNLINK 1 ATO MODE	DR		0441701	10F	A/7/16/2	
338	COM2ONR	TT&C	SBT	S-BAND DOWNLINK 2 ON	DR		0441101	109		A/7/16/6
339	ATO2ONR	TT&C	SBT	S-BAND DOWNLINK 2 ATO MODE	DR		0442000	110	A/7/16/6	
340	PRN1ENAR	TT&C	SBT	S-BAND RCVR-1 PRN INHIBIT OFF	DR		0440100	101	A/6/16/3	
341	PRN1DISR	TT&C	SBT	S-BAND RCVR-1 PRN INHIBIT ON	DR		0442600	116		A/6/16/3

342	PRN2ENAR	TT&C	SBT	S-BAND RCVR-2 PRN INHIBIT OFF	DR		0442701	117	A/6/16/3	
343	PRN2DISR	TT&C	SBT	S-BAND RCVR-2 PRN INHIBIT ON	DR		0443400	11C		A/6/16/3
344	SQL1OFR	TT&C	SBT	S-BAND RCVR-2 STBY INHIBIT OFF	DR		0442201	112	A/7/16/3	
345	SQL1ONR	TT&C	SBT	S-BAND RCVR-2 STBY INHIBIT ON	DR		0443100	119		A/7/16/3
346	SQL2OFR	TT&C	SBT	S-BAND RCVR-2 STBY INHIBIT OFF	DR		0443700	11F	A/7/16/7	
347	SQL2ONR	TT&C	SBT	S-BAND RCVR-2 STBY INHIBIT ON	DR		0444600	126		A/7/16/7
348	UPLKNRMR	TT&C	SBT	S-BAND UPLINK RCVR/DECRYPTOR NORM	DR		0410100	041		
349	UPLKXSTR	TT&C	SBT	S-BAND UPLINK RCVR/DECRYPTOR XSTRAP	DR		0410200	042		
350	XMT1SELR	TT&C	SBT	S-BAND SW XMTR OUTPUT FROM XMTR 1	D		0446700	137	Z/7/64/4	
351	XMT2SELR	TT&C	SBT	S-BAND SW XMTR OUTPUT FROM XMTR 2	D		0446200	132		A/7/64/4
352	ANTA1R	TT&C	SBT	S-BAND ANT SW A (PRI) TO POS 2 (COVERAGE)	D		0444500	125		A/7/64/3
353	ANTA2R	TT&C	SBT	S-BAND ANT SW A (PRI) TO POS 1 (COVERAGE)	D		0445601	12E	A/7/64/3	
354	ANTB1R	TT&C	SBT	S-BAND ANT SW B (RED) TO POS 1 (COVERAGE)	D		0422000	090		A/8/64/3
355	ANTB2R	TT&C	SBT	S-BAND ANT SW B (RED) TO POS 2 (COVERAGE)	D		0424701	0A7	A/8/64/3	
356	ATOENAR	TT&C	CDU	S-BAND DOWNLINK ATO ENABLE	DR		0430101	0C1	A/4/16/3	
357	ATODISR	TT&C	CDU	S-BAND DOWNLINK ATO ENABLE	DR		0430201	0C2		A/4/16/3
358	XMTR1ONR	TT&C	SBT	S-BAND XMTR1 28VDC DISABLE	DR		0440700	107	1/8/16/6	A/8/16/2
359	XMTR2ONR	TT&C	SBT	BCN XMTR 2 ON/1 OFF	DR		0441600	10E	A/8/16/2	A/8/16/6
360	XMTROFFR	TT&C	SBT	BCN XMTR 1 & 2 OFF	DR		0442500	115	A/8/16/2	
361	TLM1ONR	TT&C	SBT	S-BAND XMTR 1 SUBCARRIER INHIBIT OFF	DR		0443200	11A	A/5/16/3	
362	TLM1OFFR	TT&C	SBT	S-BAND XMTR 1 SUBCARRIER INHIBIT ON	DR		0444101	121		A/5/16/3
363	TLM2ONR	TT&C	SBT	S-BAND XMTR 2 SUBCARRIER INHIBIT OFF	DR		0444401	124	A/5/16/7	
364	TLM2OFFR	TT&C	SBT	S-BAND XMTR 2 SUBSCARRIER INHIBIT ON	DR		0443301	11B		A/5/16/7
365	MCLKENAR	TT&C	CDU	KIR-23 BYPASS MODE FOR SMC ENABLE TO MDU	DR		0410301	043		A/8/16/3
366	CDUAARMR	TT&C	CDU	CONFIGURATION A ARM CDU	D		0000001	NA		
367	CDUBARMR	TT&C	CDU	CONFIGURATION B ARM CDU	D		0040000	NA		
368	CDUAEXCR	TT&C	CDU	CONFIGURATION A EXEC CDU	D		0140001	NA		
369	CDUBEXCR	TT&C	CDU	CONFIGURATION B EXEC CDU	D		0100000	NA		
370	CDUABRTR	TT&C	CDU	ABORT & RECONFIGURE CDU	D		1400001	NA		
371	CDUNOOPR	TT&C	CDU	CDU NO OPERATIONS (NOOP) CMD	D		1000000	NA		
401	CHRG1HIR	EPS	PRU	BCC 1 CHARGE ON/HIGH RATE V/T; RED BCC OFF	D		0416601	076		A/2/10/2
402	CHRG1LOR	EPS	PRU	BCC 1 TRICKLE CHARGE RATE DISABLE V/T	D		0415001	068		A/2/10/3
403	BC1RSETR	EPS	PRU	BCC 1 V/T BITS/SHFT/DISA RST	D		0415100	069	A/2/10/4	A/2/10/1
404	VT1SHFTR	EPS	PRU	BCC 1 V/T BIT SHIFT TO 16 CELL OPS	D		0415400	06C	A/2/10/6	
405	VT1DISR	EPS	PRU	BCC 1 V/T DISABLE CONTROL	D		0414500	065	A/2/10/1	
406	BC1BIT1R	EPS	PRU	BCC 1 V/T BIT 1 SET SHIFT	D		0416301	073		A/2/10/4
407	BC1BIT2R	EPS	PRU	BCC 1 V/T BIT 2 SET SHIFT	D		0417500	07D		A/2/10/5
408	CHRG2HIR	EPS	PRU	BCC 2 CHARGER ON/HIGH RATE V/T; RED BCC OFF	D		0412101	051		A/2/11/2
409	CHRG2LOR	EPS	PRU	BCC 2 TRICKLE CHARGE RATE; DISABLE V/T	D		0411500	04D		A/2/11/3
410	BC2RSETR	EPS	PRU	BCC 2 V/T BITS/SHFT/DISA RST	D		0411300	04B	A/2/11/4	A/2/11/1
411	VT2SHFTR	EPS	PRU	BCC 2 V/T BIT SHIFT TO 16 CELL OPS	D		0416001	070	A/2/11/6	
412	VT2DISR	EPS	PRU	BCC 2 V/T DISABLE CONTROL	D		0410601	046	A/2/11/1	
413	BC2BIT1R	EPS	PRU	BCC 2 V/T BIT 1 SET SHIFT	D		0411101	049		A/2/11/4

414	BC2BIT2R	EPS	PRU	BCC 2 V/T BIT 2 SET SHIFT	D		0417201	07A		A/2/11/5
415	BCC1OFFR	EPS	PRU	BCC 1 OFF/BCC B/U ON	D		0415700	06F	A/2/64/5	
416	BCC2OFFR	EPS	PRU	BCC 2 OFF/BCC B/U ON	D		0411201	04A	A/2/64/6	
417	CHRGBHIR	EPS	PRU	BCC B/U HIGH RATE ENABLE V/T	D		0412701	057		A/2/64/1
418	CHRGBLOR	EPS	PRU	BCC B/U TRICKLE CHARGE RATE; DISABLE V/T	D		0412000	050	A/2/64/1	
419	BURSETR	EPS	PRU	BCC B/U V/T BITS/SHFT/DISA RST	D		0426200	0B2	A/2/62/2	A/2/64/0
420	VTBSHFTR	EPS	PRU	BCC B/U V/T SHIFT TO 16 CELL OPS	D		0420700	087	A/2/64/4	
421	VTBDISR	EPS	PRU	BCC B/U V/T DISABLE CONTROL	D		0417600	07E	A/2/64/0	
422	BUBIT1R	EPS	PRU	BCC B/U V/T BIT 1 SET SHIFT	D		0421600	08E		A/2/64/2
423	BUBIT2R	EPS	PRU	BCC B/U V/T BIT 2 SET SHIFT	D		0422500	095		A/2/64/3
424	OCUAENAR	EPS	OCU	OCU ENABLE SIDE A	D	CC	0420001	080	A/4/10/4	
425	OCUADISR	EPS	OCU	OCU DISABLE SIDE A	D		0412401	054		A/4/10/4
426	OCUBENAR	EPS	OCU	OCU ENABLE SIDE B	D	CC	0421401	08C	A/4/11/4	
427	OCUBDISR	EPS	OCU	OCU DISABLE SIDE B	D		0420100	081		A/4/11/4
428	AKMAARMR	EPS	OCU	PRIMARY AKM ARM	D	CC	0411000	048		A/4/10/7
429	AKMADISR	EPS	OCU	DISARM AKM SIDE A	D		0413001	058	A4/10/7	
430	AKMFIRAR	EPS	OCU	FIRE AKM SIDE A	D		0413700	05F		
431	AKMBARMR	EPS	OCU	REDUNDANT AKM ARM	D	CC	0410400	044		A/4/11/7
432	AKMBDISR	EPS	OCU	DISARM AKM EED SIDE B	D		0420501	085	A/4/11/7	
433	AKMFIRBR	EPS	OCU	FIRE AKM SIDE B	D		0426501	0B5		
434	SAAARMR	EPS	S/A	ARM S/A PYROS SIDE-A	D	CC	0420400	084		A/4/10/5
435	SABARMR	EPS	S/A	ARM S/A PYROS SIDE-B	D	CC	0421000	088		A/4/11/5
436	SAADISR	EPS	S/A	DISARM S/A PYROS SIDE-A	D		0414000	060	A/4/10/5	
437	SABDISR	EPS	S/A	DISARM S/A PYROS SIDE-B	D		0423001	098	A/4/11/5	
438	SH1ABFAR	EPS	S/A	FIRE S/A SHEAR 1 +/-Y PYROS SIDE-A	D		0413200	05A		
439	SH1ABFBR	EPS	S/A	FIRE S/A SHEAR 1 +/-Y PYROS SIDE-B	D		0424101	0A1		
440	SH2ABFAR	EPS	S/A	FIRE S/A SHEAR 2 +/-Y PYROS SIDE-A	D		0412300	053		
441	SH2ABFBR	EPS	S/A	FIRE S/A SHEAR 2 +/-Y PYROS SIDE-B	D		0420200	082		
442	SN1ABFAR	EPS	S/A	FIRE S/A SNUBBER 1 +/-Y PYROS SIDE-A	D		0417401	07C		
443	SN1ABFBR	EPS	S/A	FIRE S/A SNUBBER 1 +/-Y PYROS SIDE-B	D		0426301	0B3		
444	SN2ABFAR	EPS	S/A	FIRE S/A SNUBBER 2 +/-Y PYROS SIDE-A	D		0416501	075		
445	SN2ABFBR	EPS	S/A	FIRE S/A SNUBBER 2 +/-Y PYROS SIDE-B	D		0425400	0AC		
446	SN3ABFAR	EPS	S/A	FIRE S/A SNUBBER 3 +/-Y PYROS SIDE-A	D		0415601	06E		
447	SN3ABFBR	EPS	S/A	FIRE S/A SNUBBER 3 +/-Y PYROS SIDE-B	D		0423501	09D		
448	SN4ABFAR	EPS	S/A	FIRE S/A SNUBBER 4 +/-Y PYROS SIDE-A	D		0414701	067		
449	SN4ABFBR	EPS	S/A	FIRE S/A SNUBBER 4 +/-Y PYROS SIDE-B	D		0422701	097		
450	WAAARMR	EPS	OCU	ARM W-SENSOR PYROS SIDE-A	D	CC	0411401	04C		A/4/10/6
451	WABARMR	EPS	OCU	ARM W-SENSOR PYROS SIDE-B	D	CC	0410001	040		A/4/11/6
452	WAADISR	EPS	OCU	DISARM W-SENSOR PYROS SIDE-A	D		0612400	054	A/4/10/6	
453	WABDISR	EPS	OCU	DISARM W-SENSOR PYROS SIDE-B	D		0612020	050	A/4/11/6	
454	WABTFAR	EPS	OCU	FIRE W-SENSOR LOWER-TIE PYROS SIDE-A	D		0610300	043		
455	WABTFBR	EPS	OCU	FIRE W-SENSOR UPPER-TIE PYROS SIDE-B	D		0614620	066		
456	WAETFAR	EPS	OCU	FIRE W-SENSOR LOWER-TIE PYROS SIDE-A	D		0616220	072		

457	WAETFBR	EPS	OCU	FIRE W-SENSOR LOWER-TIE PYROS SIDE-B	D		0613500	05D		
458	WAIBFAR	EPS	OCU	FIRE W-SENSOR INTERBOOM PYROS SIDE-A	D		0612100	051		
459	WAIBFBR	EPS	OCU	FIRE W-SENSOR INTERBOOM PYROS SIDE-B	D		0611400	04C		
460	WASPFAR	EPS	OCU	FIRE W-SENSOR SPOOL PYROS SIDE-A	DR		0617020	078		
461	WASPFBR	EPS	OCU	FIRE W-SENSOR SPOOL PYROS SIDE-B	DR		0615720	06F		
462	B2C17ONR	EPS	BATT	+X PNL BATT-2 CELL 17 INLINE RESET	D		0426001	0B0		A/2/10/7
463	B2C17OFR	EPS	BATT	+X PNL BATT-2 CELL 17 BYPASS MODE	D		0416700	077	A/2/10/7	A/2/10/0
464	B2BYPASR	EPS	BATT	+X PNL BATT-2 BYPASS MODE TO CELL SHORT	D		0412201	052	A/2/10/0	
465	B1C17ONR	EPS	BATT	+X PNL BATT-1 CELL 17 INLINE RESET	D		0427101	0B9		A/2/11/7
466	B1C17OFR	EPS	BATT	+X PNL BATT-1 CELL BYPASS	D		0417701	07F	A/2/11/7	A/2/11/0
467	B1BYPASR	EPS	BATT	+X PNL BATT-1 BYPASS MODE TO CELL SHORT	D		0413100	059	A/2/11/0	
468	BPRSCALR	EPS	BATT	BATT PRES MON TO CALIBRATE MODE	D		0413601	05E		
469	BPRSNRMR	EPS	BATT	BATT PRES MON TO NORM MODE	D		0414201	062		
601	AKMHHONR	PSS	AKM	AKM HEATERS HIGH PWR ON	DR		0443001	118		A/2/16/2
602	AKMHLONR	PSS	AKM	AKM HEATERS LOW PWR ON	DR		0441201	10A		A/2/16/6
603	AKMHHOFR	PSS	AKM	AKM HEATERS HIGH PWR OFF	DR		0442101	111	A/2/16/2	
604	AKMHLOFR	PSS	AKM	AKM HEATERS LOW PWR OFF	DR		0440301	103	A/2/16/6	
605	DMPHAONR	MSS	DMP	DAMPERS HEATERS SIDE-A ON	DR		0443501	11D		A/1/16/2
606	DMPHBONR	MSS	DMP	DAMPERS HEATERS SIDE-B ON	DR		0441300	10B		A/1/16/6
607	DMPHAOFR	MSS	DMP	DAMPERS HEATERS SIDE-A OFF	DR		0442401	114	A/1/16/2	
608	DMPHBOFR	MSS	DMP	DAMPERS HEATERS SIDE-B OFF	DR		0440200	102	A/1/16/6	
609	RWAHAONR	MSS	RWA	RWA HEATERS SIDE-A ON	D		0424201	0A2		A/5/16/2
610	RWAHBONR	MSS	RWA	RWA HEATERS SIDE-B ON	D		0446100	131		A/5/16/6
611	RWAHAOFR	MSS	RWA	RWA HEATERS SIDE-A OFF	D		0422300	093	A/5/16/2	
612	RWAHBOFR	MSS	RWA	RWA HEATERS SIDE-B OFF	D		0447000	138	A/5/16/6	
700	FREQ3ONR	NAV	AFS	CAFS 28 VDC ON	DR		0613000	058		A/7/41/0
701	FREQ3OFR	NAV	AFS	CAFS 28 VDC OFF	DR	R	0614100	061	A/7/41/0	
702	FREQ1ONR	NAV	AFS	RAFS 1 28 VDC ON	DR		0614200	062		A/7/41/1
703	FREQ1OFR	NAV	AFS	RAFS 1 28 VDC OFF	DR	R	0613120	059	A/7/41/1	
704	FREQ2ONR	NAV	AFS	RAFS 2 28 VDC ON	DR		0613420	05C		A/7/42/1
705	FREQ2OFR	NAV	AFS	RAFS 2 28 VDC OFF	DR	R	0614520	065	A/7/42/1	
706	L1XBENAR	LBS	L1	L1 XMIT B ENABLE	D		0622200	092	A/6/41/0	
707	L1XBDISR	LBS	L1	L1 XMIT B DISABLE	D		0623300	09B		A/6/41/0
708	L2XBENAR	LBS	L2	L2 XMIT B ENABLE	D		0624400	0A4	A/6/42/0	
709	L2XBDISR	LBS	L2	L2 XMIT B DISABLE	D		0625500	0AD		A/6/42/0
710	FS3HTONR	NAV	CAFS	CAFS HEATER 28VDC ON	DR		0614400	064		A/7/42/0
711	FS3HTOFR	NAV	CAFS	CAFS HEATER 28 VDC OFF	DR	R	0613300	05B	A/7/42/0	
712	IXMTAONR	ITS	CTDU	CTDU XMTR A 28V ON B OFF	DR		0617400	07C	A/7/42/4	A/7/41/5
713	IXMTBONR	ITS	CTDU	CTDU XMTR A 28V OFF B ON	DR		0616300	073	A/7/41/5	A/7/42/4
714	IXMTOFFR	ITS	CTDU	CTDU XMTR A 28V OFF B OFF	DR		0615220	06A	A/7/41/5	A/7/42/4
715	IRCVAONR	ITS	CTDU	CTDU RCVR A 28V ON B OFF	DR		0615000	068	A/7/42/2	A/7/41/3
716	IRCVBONR	ITS	CTDU	CTDU RCVR A 28V OFF B ON	DR		0617200	07A	A/7/41/3	A/7/42/2
717	IRCVOFFR	ITS	CTDU	CTDU RCVR A 28V OFF B OFF	DR		0616120	071	A/7/41/3	A/7/42/2

718	L12AONR	LBS	L1L2	L1/L2 DC CONV A ON	D		0620220	082		A/4/41/0
719	L12ASTBR	LBS	L1L2	L1/L2 DC CONV A STBY	D		0621320	08B	A/4/41/0	
720	L1XAENAR	LBS	L1	L1 XMIT A ENABLE	D		0622400	094	A/4/41/1	
721	L1XADISR	LBS	L1	L1 XMIT A DISABLE	D		0623500	09D		A/4/41/1
722	L2XAENAR	LBS	L2	L2 XMIT A ENABLE	D		0624620	0A6	A/4/42/1	
723	L2XADISR	LBS	L2	L2 XMIT A DISABLE	D		0625720	0AF		A/4/42/1
724	L12BONR	LBS	L1L2	L1/L2 DC CONV B ON	D		0622020	090		A/4/42/0
725	L12BSTBR	LBS	L1L2	L1/L2 DC CONV B STBY	D		0623120	099	A/4/42/0	
726	L1HPNRMR	LBS	L1L2	L1/L2 CONV TO L1 HPA NORM	D		0624200	0A2	A/4/42/2	A/4/41/2
727	L1HPXSTR	LBS	L1L2	L1/L2 CONV TO L1 HPA XSTRAP	D		0625300	0AB	A/4/41/2	A/4/42/2
728	L2HPNRMR	LBS	L1L2	L1/L2 CONV TO L2 HPA NORM	D		0626420	0B4	A/4/42/3	A/4/41/3
729	L2HPXSTR	LBS	L1L2	L1/L2 CONV TO L2 HPA XSTRAP	D		0627520	0BD	A/4/41/3	A/4/42/3
730	L1IPNRMR	LBS	L1L2	L1/L2 CONV TO L1 MOD IPA NORM	D		0620120	081	A/4/42/4	A/4/41/4
731	L1IPXSTR	LBS	L1L2	L1/L2 CONV TO L1 MOD IPA XSTRAP	D		0621200	08A	A/4/41/4	A/4/42/4
732	L2IPNRMR	LBS	L1L1	L1/L2 CONV TO L2 MOD IPA NORM	D		0622320	093	A/4/42/5	A/4/41/5
733	L2IPXSTR	LBS	L1L2	L1/L2 CONV TO L2 MOD IPA XSTRAP	D		0623420	09C	A/4/41/5	A/4/42/5
734	L1SYNRMR	LBS	L1L2	L1/L2 CONV TO L1 SYNTH NORM	D		0621020	088	A/4/42/6	A/4/41/6
735	L1SYXSTR	LBS	L1L2	L1/L2 CONV TO L1 SYNTH XSTRAP	D		0622100	091	A/4/41/6	A/4/42/6
736	L2SYNRMR	LBS	L1L2	L1/L2 CONV TO L2 SYNTH NORM	D		0623220	09A	A/4/42/7	A/4/41/7
737	L2SYXSTR	LBS	L1L2	L1/L2 CONV TO L2 SYNTH XSTRAP	D		0624320	0A3	A/4/41/7	A/4/42/7
738	L3CAONR	LBS	L3	L3 CONV A ON	D		0625420	0AC	A/5/41/0	
739	L3CASTBR	LBS	L3	L3 CONV A STBY	D		0626500	0B5		A/5/41/0
740	L3CBONR	LBS	L3	L3 CONV B ON	D		0624520	0A5	A/5/42/0	
741	L3CBSTBR	LBS	L3	L3 CONV B STBY	D		0625600	OAE		A/5/42/0
742	L3HPNRMR	LBS	L3	L3 CONV TO L3 HPA NORM	D		0626720	0B7	A/5/42/2	A/5/41/2
743	L3HPXSTR	LBS	L3	L3 CONV TO L3 HPA XSTRAP	D		0627620	0BE	A/5/41/2	A/5/42/2
744	L3IPNRMR	LBS	L3	L3 CONV TO L3 MOD IPA NORM	D		0620300	083	A/5/42/3	A/5/41/3
745	L3IPXSTR	LBS	L3	L3 CONV TO L3 MOD IPA XSTRAP	D		0621400	08C	A/5/41/3	A/5/42/3
746	L3SYNRMR	LBS	L3	L3 CONV TO L3 SYNTH NORM	D		0622520	095	A/5/42/4	A/5/41/4
747	L3SYXSTR	LBS	L3	L3 CONV TO L3 SYNTH XSTRAP	D		0623600	09E	A/5/41/4	A/5/42/4
748	L3XAENAR	LBS	L3	L3 XMTR A ENABLE	D		0623000	098		A/5/41/1
749	L3AXDISR	LBS	L3	L3 XMTR A DISABLE	D		0624100	0A1	A/5/41/1	
750	L12CAPWR	LBS	L1L2	L1/L2 CONV A 28 V ON B OFF	DR		0614020	060	A/7/42/3	A/7/41/4
751	L12CBPWR	LBS	L1L2	L1/L2 CONV B 28 V ON A OFF	DR		0613720	05F	A/7/41/4	A/7/42/3
752	L12CVOFR	LBS	L1L2	L1/L2 CONV A AND B OFF	DR		0617320	07B	A/7/41/4	A/7/42/3
753	L3CVAPWR	LBS	L3	L3 CONV A 28 V ON B OFF	DR		0615300	06B	A/7/42/5	A/7/41/6
754	L3CVBPWR	LBS	L3	L3 CONV B 28 V ON A OFF	DR		0616420	074	A/7/41/6	A/7/42/5
755	L3CVOFFR	LBS	L3	L3 CONV A AND B OFF	DR		0617520	07D	A/7/41/6	A/7/42/5
756	BMINRMR	NAV	MDU	MDU DC CONV BMI NORM	D		0625220	0AA	A/1/42/1	A/1/41/1
757	BMIXSTR	NAV	MDU	MDU DC CONV B TO BMI A XSTRAP	D		0626300	0B3	A/1/41/1	A/1/42/1
758	MCPUNRMR	NAV	MDU	MDU DC CONV CPU MEM NORM	D		0620420	084	A/1/42/2	A/1/41/2
759	MCPUXSTR	NAV	MDU	MDU DC CONV CPU MEM XSTRAP	D		0621520	08D	A/1/41/2	A/1/42/2
760	L3XBENAR	LBS	L3	L3 XMTR B ENABLE	D		0622620	096		A/5/42/1

761	L3XBDISR	LBS	L3	L3 XMTR B DISABLE	D		0623720	09F	A/5/42/1	
762	MDUCVANR	NAV	MDU	MDU DC CONV A ON	D		0624020	0A0		A/1/41/0
763	MDUCVASR	NAV	MDU	MDU DC CONV A STBY	D		0625120	0A9	A/1/41/0	
764	MDUCVBNR	NAV	MDU	MDU DC CONV B ON	D		0626220	0B2		A/1/42/0
765	MDUCVBSR	NAV	MDU	MDU DC CONV B STBY	D		0627320	0BB	A/1/42/0	
766	FSUNRMR	NAV	MDU	CONV A TO FSU A VCXO NORM	D		0620500	085	A/1/42/4	A/1/41/4
767	FSUXSTR	NAV	MDU	MDU DC CONV FSU VCXO XSTRAP	D		0621620	08E	A/1/41/4	A/1/42/4
768	MDUCAONR	NAV	MDU	MDU A 28 VDC ON B OFF	DR		0615420	06C	A/7/42/6	A/7/41/7
769	MDUCBONR	NAV	MDU	MDU B 28 VDC ON A OFF	DR		0617620	07E	A/7/41/7	A/7/42/6
770	MDUCOFFR	NAV	MDU	MDU A AND B OFF	DR		0616500	075	A/7/41/7	A/7/42/6
801	BDPAONR	NDS	BDP	BDP 28 VDC A ON, B OFF	DR		0435500	0ED	A/4/16/0	A/3/16/0
802	BDPOFFR	NDS	BDP	BDP 28 VDC A & B OFF	DR		0437001	0F8	A/3/16/0	A/4/16/0
803	BDPBONR	NDS	BDP	BDP 28 VDC A OFF, B ON	DR		0434601	0E6	A/3/16/0	A/4/16/0
804	WAPWRONR	NDS	BDP	BDW 28 VDC A ON, B OFF	DR		0434200	0E2	A/4/16/4	A/3/16/4
805	WPWROFFR	NDS	BDP	BDW 28 VDC A & B OFF	DR		0433201	0DA	A/3/16/4	A/4/16/4
806	WBPWRONR	NDS	BDP	BDW 28 VDC A OFF, B ON	DR		0435101	0E9	A/3/16/4	A/4/16/4
807	BDPINI1R	NDS	BDP	BDP INITIALIZE 1	D		0443601	11E		
808	BDPINI2R	NDS	BDP	BDP INITIALIZE 2 (ALT)	D		0444701	127		
809	BDWAONR	NDS	BDP	BDW LOWBAND ON A CONVERTER	D		0444201	122		
810	BDWBONR	NDS	BDP	BDW LOWBAND ON B CONVERTER	D		0445301	12B		
811	BDWXSTPR	NDS	BDP	BDW CONV/ELEC B-A, A-B	D		0445400	12C		
812	BDWNRMR	NDS	BDP	BDW CONV/ELEC A-A, B-B	D		0444300	123		
813	BDYAONR	NDS	BDP	BDY A ON, BDY B OFF	D		0444000	120		
814	BDYBONR	NDS	BDP	BDY A OFF, BDY B ON	D		0445100	129		
815	RAPOFFR	RAP	RAP	RAP 28VDC OFF	DR		0614320	063	A/7/41/2	
816	RAPONR	RAP	RAP	RAP 28VDC ON	DR		0613220	05A		A/7/41/2

REFERENCE

A-1. GPS IIR Orbital Operatons Handbook (OOH), Volume III - Command and Control, G73-OOH-0033B, Martin Marietta Corp. Philadelphia, PA., 13 February 1995.

APPENDIX B

GPS IIR MESSAGE COMMAND BY COMMAND NUMBER TABLE

CMD No.	Mnemonic	S/S & Comp	Command/Parameter Description	CMD Bit Definition			Command Parameter Definition		Comments
				Process	20 Bit OCTAL	16 Bit Hex	No of Param	Parameter Bit Field (16 Bit Words)	
04000	GBDCMDLR	NDS GBD	GBD COMMAND DATA		2D			D=10AAAAAAAABBBBBBBBP	
04001	GBDLOADR	NDS GBD	GBD MEMORY LOAD		3D			D=ABBBBBBBBBBBBBBBP	
07000		TNP MDU	MDU SERIAL CMD DATA						
07100		TNP MDU	MDU PULSE TYPE SMCs						
07101	FINPGCHR	TNP MDU	FINALIZE PROGRAM CHANGE	MDU PULSE	2304067	C41B			
07102	CLEARUPR	TNP MDU	CLEAR UPLOAD	MDU PULSE	2310045	C812			
07103	PFALLBKR	TNP MDU	PROGRAM FALLBACK COMMAND	MDU PULSE	2314053	CC15			
07104	PRQRSTR	TNP MDU	PROCESSOR RESET	MDU PULSE	2320046	D013			
07105	BBRESETR	TNP MDU	BASEBAND RESET	MDU PULSE	2324050	D414			
07107	HWPULS1R	TNP MDU	SPARE H/W PULSE 1	MDU PULSE	2330072	D81D			
07108	NEDTESTR	TNP MDU	NED TEST	MDU PULSE	2334064	DC1A			
07300		TNP MDU	MDU STORED TYPE SMCs	MDU STORED					
07301	B2HSGMR	TNP MDU	HSG MODE SEL BLOCK II-S/W 1	MDU STORED	2300123	C029			DEFAULT
07302	B2RHSGMR	TNP MDU	HSG MODE SEL BLOCK IIR-S/W 1	MDU STORED	2304135	C42E			DEFAULT
07303	COLDSONR	TNP MDU	COLD START ON-S/W 2	MDU STORED	2300207	C043			DEFAULT
07304	COLDSOFR	TNP MDU	COLD START OFF (WARM START)-S/W 2	MDU STORED	2304211	C444			
07305	CLTXENAR	TNP MDU	CLTX ENABLE-S/W 3	MDU STORED	2300410	C084			
07306	CLTXDISR	TNP MDU	CLTX DISABLE-S/W 3	MDU STORED	2304406	C483			DEFAULT
07307	L3DATONR	TNP MDU	L3 C/A + DATA ON-H/W 4	MDU STORED	2301025	C10A			
07308	L3CAR	TNP MDU	L3 C/A ONLY-H/W 4	MDU STORED	2305033	C50D			DEFAULT
07309	AAFSENAR	TNP MDU	AUTONOMOUS AFS SW ENABLE-S/W 5	MDU STORED	2302013	C205			
07310	AAFSDISR	TNP MDU	AUTONOMOUS AFS SW DISABLE-S/W 5	MDU STORED	2306005	C602			DEFAULT
07311	SQENAONR	TNP MDU	STATUS QUEUE ENABLE ON-S/W 6	MDU STORED	2300324	C065			
07312	SQENAOFR	TNP MDU	STATUS QUEUE ENABLE OFF-S/W 6	MDU STORED	2304304	C462			DEFAULT
07313	SWSP9ONR	TNP MDU	SOFTWARE SPARE 9 ON-S/W 7	MDU STORED	2320114	D026			
07314	SWSP9OFR	TNP MDU	SOFTWARE SPARE 9 OFF-S/W 7	MDU STORED	2324102	D421			DEFAULT
07315	ASONR	TNP MDU	A-S ON-S/W 8	MDU STORED	2320230	D04C			
07316	ASOFFR	TNP MDU	A-S OFF-S/W 8	MDU STORED	2324226	D44B			DEFAULT
07317	DUMPONR	TNP MDU	MEMORY DUMP ON-S/W 9	MDU STORED	2320427	D08B			
07318	DUMPOFFR	TNP MDU	MEMORY DUMP OFF-S/W 9	MDU STORED	2324431	D48C			DEFAULT
07319	MRSTENAR	TNP MDU	MDU RESTART ENABLED-S/W 10	MDU STORED	2321012	D105			
07320	MINIENAR	TNP MDU	MDU INITIALIZATION ENABLED-S/W 10	MDU STORED	2325004	D502			DEFAULT
07321	IDBYPASR	TNP MDU	IDD BYPASS ON-S/W 11	MDU STORED	2322024	D20A			DEFAULT
07322	IDDONR	TNP MDU	IDD BYPASS OFF-S/W 11	MDU STORED	2326032	D60D			
07323	SWS10ONR	TNP MDU	SOFTWARE SPARE 10 ON-S/W 12	MDU STORED	2320325	D06A			
07324	SWS10OFR	TNP MDU	SOFTWARE SPARE 10 OFF-S/W 12	MDU STORED	2324333	D46D			DEFAULT
07325	WDMONENR	TNP MDU	WATCHDOG MON ENABLE ON-H/W 13	MDU STORED	2330120	D828			
07326	WDMONDIR	TNP MDU	WATCHDOG MON DISABLE OFF-H/W 13	MDU STORED	2334136	DC2F			DEFAULT
07327	HWSP2ONR	TNP MDU	HARDWARE SPARE 2 ON-H/W 14	MDU STORED	2330204	D842			
07328	HWSP2OFR	TNP MDU	HARDWARE SPARE 2 OFF-H/W 14	MDU STORED	2334212	DC45			DEFAULT
07329	HWSP1ONR	TNP MDU	HARDWARE SPARE 1 ON-H/W 15	MDU STORED	2330413	D885			
07330	HWSP1OFR	TNP MDU	HARDWARE SPARE 1 OFF-H/W 15	MDU STORED	2334405	DC82			DEFAULT
07331	L2BONR	TNP MDU	L2 SEL B ON-H/W 16	MDU STORED	2331026	D90B			DEFAULT
07332	L2BOFFR	TNP MDU	L2 SEL B OFF-H/W 16	MDU STORED	2335030	DD0C			
07333	L2AONR	TNP MDU	L2 SEL A ON-H/W 17	MDU STORED	2332010	DA04			DEFAULT
07334	L2AOFFR	TNP MDU	L2 SEL A OFF-H/W 17	MDU STORED	2336006	DE03			
07335	PORTEONR	TNP MDU	PORT ERROR RESET ENABLED-H/W 18	MDU STORED	2330311	D864			
07336	PORTEOFR	TNP MDU	PORT ERROR RESET INHIBITED-H/W 18	MDU STORED	2334307	DC63			DEFAULT
07337	SWS3ONR	TNP MDU	SOFTWARE SPARE 3 ON-S/W 19	MDU STORED	2310117	C827			
07338	SWS3OFFR	TNP MDU	SOFTWARE SPARE 3 OFF-S/W 19	MDU STORED	2314101	CC20			DEFAULT

07339	SWS4ONR	TNP MDU	SOFTWARE SPARE 4 ON-S/W 20	MDU STORED	2310233	C84D			
07340	SWS4OFFR	TNP MDU	SOFTWARE SPARE 4 OFF-S/W 20	MDU STORED	2314225	CC4A			DEFAULT
07341	SWS5ONR	TNP MDU	SOFTWARE SPARE 5 ON-S/W 21	MDU STORED	2310424	C88A			
07342	SWS5OFFR	TNP MDU	SOFTWARE SPARE 5 OFF-S/W 21	MDU STORED	2314432	CC8D			DEFAULT
07343	SWS6ONR	TNP MDU	SOFTWARE SPARE 6 ON-S/W 22	MDU STORED	2311011	C904			
07344	SWS6OFFR	TNP MDU	SOFTWARE SPARE 6 OFF-S/W 22	MDU STORED	2315007	CD03			DEFAULT
07345	SWS7ONR	TNP MDU	SOFTWARE SPARE 7 ON-S/W 23	MDU STORED	2312027	CA0B			
07346	SWS7OFFR	TNP MDU	SOFTWARE SPARE 7 OFF-S/W 23	MDU STORED	2316031	CE0C			DEFAULT
07347	SWS8ONR	TNP MDU	SOFTWARE SPARE 8 ON-S/W 24	MDU STORED	2310326	C86B			
07348	SWS8OFFR	TNP MDU	SOFTWARE SPARE 8 OFF-S/W 24	MDU STORED	2314330	CC6C			DEFAULT
07500		TNP MDU	MDU SVID STORED TYPE SMCs	MDU SVID STORED					
07501	SVID01R	TNP MDU	SVID 01	MDU SVID STORED	2340043	E011			
07502	SVID02R	TNP MDU	SVID 02	MDU SVID STORED	2340111	E024			
07503	SVID03R	TNP MDU	SVID 03	MDU SVID STORED	2340156	E037			
07504	SVID04R	TNP MDU	SVID 04	MDU SVID STORED	2340235	E04E			
07505	SVID05R	TNP MDU	SVID 05	MDU SVID STORED	2340272	E05D			
07506	SVID06R	TNP MDU	SVID 06	MDU SVID STORED	2340320	E068			
07507	SVID07R	TNP MDU	SVID 07	MDU SVID STORED	2340367	E07B			
07508	SVID08R	TNP MDU	SVID 08	MDU SVID STORED	2340422	E089			
07509	SVID09R	TNP MDU	SVID 09	MDU SVID STORED	2340465	E09A			
07510	SVID10R	TNP MDU	SVID 10	MDU SVID STORED	2340537	E0AF			
07511	SVID11R	TNP MDU	SVID 11	MDU SVID STORED	2340570	E0BC			
07512	SVID12R	TNP MDU	SVID 12	MDU SVID STORED	2340613	E0C5			
07513	SVID13E	TNP MDU	SVID 13	MDU SVID STORED	2340654	E0D6			
07514	SVID14R	TNP MDU	SVID 14	MDU SVID STORED	2340706	E0E3			
07515	SVID15R	TNP MDU	SVID 15	MDU SVID STORED	2340741	E0F0			
07516	SVID16R	TNP MDU	SVID 16	MDU SVID STORED	2341017	E107			
07517	SVID17R	TNP MDU	SVID 17	MDU SVID STORED	2341050	E114			
07518	SVID18R	TNP MDU	SVID 18	MDU SVID STORED	2341102	E121			
07519	SVID19R	TNP MDU	SVID 19	MDU SVID STORED	2341145	E132			
07520	SVID20R	TNP MDU	SVID 20	MDU SVID STORED	2341226	E14B			
07521	SVID21R	TNP MDU	SVID 21	MDU SVID STORED	2341261	E158			
07522	SVID22R	TNP MDU	SVID 22	MDU SVID STORED	2341333	E16D			
07523	SVID23R	TNP MDU	SVID 23	MDU SVID STORED	2341374	E17E			
07524	SVID24R	TNP MDU	SVID 24	MDU SVID STORED	2341431	E18C			
07525	SVID25R	TNP MDU	SVID 25	MDU SVID STORED	2341476	E19F			
07526	SVID26R	TNP MDU	SVID 26	MDU SVID STORED	2341524	E1AA			
07527	SVID27R	TNP MDU	SVID 27	MDU SVID STORED	2341563	E1B9			
07528	SVID28R	TNP MDU	SVID 28	MDU SVID STORED	2341600	E1C0			
07529	SVID29R	TNP MDU	SVID 29	MDU SVID STORED	2341647	E1D3			
07530	SVID30R	TNP MDU	SVID 30	MDU SVID STORED	2341715	E1E6			
07531	SVID31R	TNP MDU	SVID 31	MDU SVID STORED	2341752	E1F5			
07532	SVID32R	TNP MDU	SVID 32	MDU SVID STORED	2342021	E208			
07533	SVID33R	TNP MDU	SVID 33	MDU SVID STORED	2342066	E21B			
07534	SVID34R	TNP MDU	SVID 34	MDU SVID STORED	2342134	E22E			
07535	SVID35R	TNP MDU	SVID 35	MDU SVID STORED	2342173	E23D			
07536	SVID36R	TNP MDU	SVID 36	MDU SVID STORED	2342210	E244			
07537	SVID37R	TNP MDU	SVID 37	MDU SVID STORED	2342257	E257			DEFAULT
07700		TNP MDU	MDU S/W AND CTDU TYPE SMCs	MDU S/W & CTDU					
07701	SWCMDSPR	TNP MDU	SPARE COMMAND	MDU S/W & CTDU	270000D			D=0pP	
07702	L3XMTMDR	TNP MDU	SEL L3 XMIT MODE	MDU S/W & CTDU	207020D			D=00XXpP	XX=00 OFF DEFAULT
07703	ITXSMITR	TNP MDU	SEL XMIT SLOT	MDU S/W & CTDU	2704D			D=00XXXXXpP	XXXXX=00000 DEFAULT (ALL OFF)

07704	IRCVLOWR	TNP MDU	SEL ACTIVE RCV SLOTS (0-7)	MDU S/W & CTDU	270D			D=11XXXXXXXXpP	XXXXXXXX=00000000 DEFAULT (ALL OFF)
07705	IRCVMEDR	TNP MDU	SEL ACTIVE RCV SLOTS (8-15)	MDU S/W & CTDU	271D			D=01XXXXXXXXpP	XXXXXXXX=00000000 DEFAULT (ALL OFF)
07706	IRCVHIR	TNP MDU	SEL ACTIVE RCV SLOTS (16-23)	MDU S/W & CTDU	271D			D=01XXXXXXXXpP	XXXXXXXX=00000000 DEFAULT (ALL OFF)
07707	NEXTWODR	TNP MDU	SEL NEXT WORD	MDU S/W & CTDU	2714D			D=00XXXXXpP	XXXXX=11111 DEFAULT (16)
07708		TNP MDU	NOT USED SEE-COMMANDS 07722-07725	MDU S/W & CTDU					SEE COMMANDS 07722-07725
07709	NAVMCTLR	TNP MDU	NAVIGATION MODE CONTROL	MDU S/W & CTDU	27200D			D=0LAApP	L=0, AA=00 DEFAULT
07710	ANAVINTR	TNP MDU	SEL AUTONAV RNGE INTERVAL	MDU S/W & CTDU	27220D			D=0XXXpP	XXX=000 (15 MIN) DEFAULT
07711	REQCTDUR	TNP MDU	REQUEST SMC STATUS TLM	MDU S/W & CTDU	2724002				
07712	MCOMSECR	TNP MDU	COMSEC CONFIGURATION	MDU S/W & CTDU	27260D			D=XXYYpP	XX=00, YY=00 DEFAULT
07713	RTOCMDR	TNP MDU	RTO MODE	MDU S/W & CTDU	273000D			D=XpP	X=0 (OFF) DEFAULT
07714	RAPCMDR	TNP MDU	RAP MODE	MDU S/W & CTDU	273200D			D=XpP	X=0 (OFF) DEFAULT
07715	NSCCODER	TNP MDU	NON-STANDARD CODE (NSC)	MDU S/W & CTDU	273400D			D=XpP	X=1 (ON) DEFAULT
07716	DMPSTPG	TNP MDU	COMMANDED DUMP START PAGE	MDU S/W & CTDU	273D			D=11XXXXXXXXpP	XXXXXXXX=00000000 DEFAULT
07717	DMPSTWRD	TNP MDU	COMMANDED DUMP START WORD	MDU S/W & CTDU	274D			D=00XXXXXXXXpP	XXXXXXXX=00000000 DEFAULT
07718	DIAGSTPG	TNP MDU	COMMANDED DIAG START PAGE	MDU S/W & CTDU	274D			D=01XXXXXXXXpP	XXXXXXXX=00000000 DEFAULT
07719	DIAGENPG	TNP MDU	COMMANDED DIAG END PAGE	MDU S/W & CTDU	274D			D=10XXXXXXXXpP	XXXXXXXX=00000000 DEFAULT
07720	DIAGRQST	TNP MDU	REQUEST MEMORY DIAGNOSTICS	MDU S/W & CTDU	27460D			D=XXXXpP	XXXX=0000 (NO TEST) DEFAULT
07721	PRTERRTH	TNP MDU	PORT ERROR THRESHOLD	MDU S/W & CTDU	275D			D-00XXXXXXXXpP	XXXXXXXX=00000011 (3)
07722	INORHOPR	TNP MDU	HOPPING FREQ-NORMAL MODE	MDU S/W & CTDU	2716D			D=00XXXXXpP	
07723	IBERHOPR	TNP MDU	HOPPING FREQ-BER TEST MODE	MDU S/W & CTDU	2716D			D=01XXXXXpP	
07724	INORMODR	TNP MDU	FIXED FREQ-NORMAL MODE	MDU S/W & CTDU	2716D			D=10XXXXXpP	
07725	IBERMODR	TNP MDU	FIXED FREQ-BER TEST MODE	MDU S/W & CTDU	2716D			D=11XXXXXpP	
07726	MEMINITR	TNP MDU	INITIALIZE MEMORY BETWEEN LIMITS	MDU S/W & CTDU	2746050	E614			EXTENSION OF CMD 07720
07727		TNP MDU	SPARE COMMANDS 21-31	MDU S/W & CTDU	27D			D=XXXXX00000000	
08000		RAP RAP	RAP SERIAL CMD DATA						
09000	MDUPRER	TT&C CDU	MDU SMC PRECURSOR		122D			D=XXXXXXX0000P	
09150	RAPPRER	TT&C CDU	RAP SMC PRECURSOR		123D			D=XXXXXXX0000P	
09300	GBDPPRER	TT&C CDU	BDP SMC PRECURSOR		125D			D=XXXXXXX0000P	
09450	GBDWPRER	TT&C CDU	BDW SMC PRECURSOR		126D			D=XXXXXXX0000P	
09600	SPUAPRER	TT&C CDU	SPU-A SMC PRECURSOR		127D			D=XXXXXXX0000P	
09750	SPUBPRER	TT&C CDU	SPU-B SMC PRECURSOR		130D			D=XXXXXXX0000P	
09900	TIUPRER	TT&C CDU	TIU SMC PRECURSOR		1310040				THE TIU REQUIRES ONLY ONE COMMAND TO FOLLOW THE PRECURSOR.
09901	TNORM1LR	TT&C TIU	TIU NORMAL MODE-FORMAT 1-LOW RATE		3000001				
09902	TNORM2LR	TT&C TIU	TIU NORMAL MODE-FORMAT 2-LOW RATE		3400000				
09903	TNORM1HR	TT&C TIU	TIU NORMAL MODE-FORMAT 1-HIGH RATE		2000000				
09904	TNORM2HR	TT&C TIU	TIU NORMAL MODE-FORMAT 2-HIGH RATE		2400001				
09905	TDMP1LR	TT&C TIU	TIU DUMP MODE-FORMAT 1-LOW RATE		31D			D=XXXXXXXXXXXP	SEE FIGURE 20-1 FOR 12 BIT DUMP ADDRESSES
09906	TDMP2LR	TT&C TIU	TIU DUMP MODE-FORMAT 2-LOW RATE		35D			D=XXXXXXXXXXXP	SEE FIGURE 20-1 FOR 12 BIT DUMP ADDRESSES
09907	TDMP1HR	TT&C TIU	TIU DUMP MODE-FORMAT 1-HIGH RATE		21D			D=XXXXXXXXXXXP	SEE FIGURE 20-1 FOR 12 BIT DUMP ADDRESSES
09908	TDMP2HR	TT&C TIU	TIU DUMP MODE-FORMAT 2-HIGH RATE		25D			D=XXXXXXXXXXXP	SEE FIGURE 20-1 FOR 12 BIT DUMP ADDRESSES
09909	TDWL1LR	TT&C TIU	TIU DWELL MODE-FORMAT 1-LOW RATE		32D			D=XXXXXXXXXXXP	SEE TABLE 20-2 FOR 12 BIT DWELL ADDRESSES
09910	TDWL2LR	TT&C TIU	TIU DWELL MODE-FORMAT 2-LOW RATE		36D			D=XXXXXXXXXXXP	SEE TABLE 20-2 FOR 12 BIT DWELL ADDRESSES

09911	TDWL1HR	TT&C TIU	TIU DWELL MODE-FORMAT 1-HIGH RATE		22D			D=XXXXXXXXXXXP	SEE TABLE 20-2 FOR 12 BIT DWELL ADDRESSES
09912	TDWL2HR	TT&C TIU	TIU DWELL MODE-FORMAT 2-HIGH RATE		26D			D=XXXXXXXXXXXP	SEE TABLE 20-2 FOR 12 BIT DWELL ADDRESSES
10000	CDUCMDOR	TT&C SPU	CDU COMMAND OPCODE	CMDX	2400001	0	1		
10000A		TT&C SPU	16 BIT CDU COMMAND	CMDX					
10100	XFERADRR	TT&C SPU	TRANSFER (RAM ADDRESS)	RBOOT	2401000	0100	1		
10100A		TT&C SPU	LOGICAL ADDRESS	RBOOT					
10101	EXECCMDR	TT&C SPU	GO (EXECUTE CMDS)	RBOOT	2401003	0101			
10102	READIOPR	TT&C SPU	READ I/O PORT	RBOOT	2401005	0102	1		
10102A		TT&C SPU	I/O PORT (ID OF PORT TO READ)	RBOOT					
10103	WRITIOPR	TT&C SPU	WRITE I/O PORT	RBOOT	2401006	0103	2		
10103A		TT&C SPU	I/O PORT (ID OF PORT TO WRITE)	RBOOT					
10103B		TT&C SPU	INFORMATION (DATA TO I/O PORT)	RBOOT					
10104	RAMCHKSR	TT&C SPU	CHECKSUM OF RAM	RBOOT	2401011	0104	4		
10104A		TT&C SPU	UPPER RAM ADDRESS (16 BITS)	RBOOT					
10104B		TT&C SPU	LOWER RAM ADDRESS (16 BITS)	RBOOT					
10104C		TT&C SPU	UPPER RAM RANGE (16 BITS)	RBOOT					
10104D		TT&C SPU	LOWER RAM RANGE (16 BITS)	RBOOT					
10105	ROMCHKSR	TT&C SPU	CHECKSUM OF ROM	RBOOT	2401012	0105	3		
10105A		TT&C SPU	ROM ADDRESS	RBOOT					
10105B		TT&C SPU	UPPER ROM RANGE (16 BITS)	RBOOT					
10105C		TT&C SPU	LOWER ROM RANGE (16 BITS)	RBOOT					
10106	NOOPCMDR	TT&C SPU	NOOP (NO OPERATION)	RBOOT	2401014	0106			
10200	LDMEMRBR	TT&C SPU	UPLINKED MEMORY LOAD	RLOAD	2402000	0200	4		
10200A		TT&C SPU	UPPER RAM ADDRESS (16 BITS)	RLOAD					
10200B		TT&C SPU	LOWER RAM ADDRESS (16 BITS)	RLOAD					
10200C		TT&C SPU	RAM RANGE	RLOAD					
10200D		TT&C SPU	DATA	RLOAD					0-123 16-BIT DATA WORDS
10201	ROMRAMLR	TT&C SPU	LOAD ROM TO RAM	RLOAD	2402003	0201	5		
10201A		TT&C SPU	ROM ADDRESS	RLOAD					
10201B		TT&C SPU	UPPER ROM RANGE (16 BITS)	RLOAD					
10201C		TT&C SPU	LOWER ROM RANGE (16 BITS)	RLOAD					
10201D		TT&C SPU	UPPER RAM ADDRESS (16 BITS)	RLOAD					
10201E		TT&C SPU	LOWER RAM ADDRESS (16 BITS)	RLOAD					
10202	RAMRAMLR	TT&C SPU	LOAD RAM TO RAM	RLOAD	2402005	0202	6		
10202A		TT&C SPU	UPPER RAM START (16 BITS)	RLOAD					
10202B		TT&C SPU	LOWER RAM START (16 BITS)	RLOAD					
10202C		TT&C SPU	UPPER RAM RANGE (16 BITS)	RLOAD					
10202D		TT&C SPU	LOWER RAM RANGE (16 BITS)	RLOAD					
10202E		TT&C SPU	UPPER RAM DEST. (16 BITS)	RLOAD					
10202F		TT&C SPU	LOWER RAM DEST. (16 BITS)	RLOAD					
10203	ZEROMEMR	TT&C SPU	ZERO UPPER MEMORY	RLOAD	2402006	0203			
10300	RAMDUMPR	TT&C SPU	DUMP RAM DATA	RDUMP	2403001	0300	4		
10300A		TT&C SPU	UPPER RAM ADDRESS (16 BITS)	RDUMP					
10300B		TT&C SPU	LOWER RAM ADDRESS (16 BITS)	RDUMP					
10300C		TT&C SPU	UPPER RAM RANGE (16 BITS)	RDUMP					
10300D		TT&C SPU	LOWER RAM RANGE (16 BITS)	RDUMP					
10301	ROMDUMPR	TT&C SPU	DUMP ROM DATA	RDUMP	2403002	0301	3		
10301A		TT&C SPU	ROM ADDRESS	RDUMP					
10301B		TT&C SPU	UPPER ROM RANGE (16 BITS)	RDUMP					
10301C		TT&C SPU	LOWER ROM RANGE (16 BITS)	RDUMP					
10302	SEBFDMPR	TT&C SPU	DUMP SPU ERROR BUFFER	RDUMP	2403004	0302			

10500	MODESWTR	TT&C SPU	SELECT MODE	MODES	2405001	0500	1		
10500A		TT&C SPU	MODE	MODES					
10501	GNDMSFTR	TT&C SPU	SET GRND MODE SW FLAG TRUE	MODES	2405002	0501			
10502	GNDMSFFR	TT&C SPU	SET GRND MODE SW FLAG FALSE	MODES	2405004	0502			
10503	AUTMSFTR	TT&C SPU	SET AUTON MODE SW FLAG TRUE	MODES	2405007	0503			
10504	AUTMSFFR	TT&C SPU	SET AUTON MODE SW FLAG FALSE	MODES	2405010	0504			
10505	MAGTENAR	TT&C SPU	ENABLE MOMENTUM MANAGEMENT	MODES	2405013	0505			
10506	MMGTDISR	TT&C SPU	DISABLE MOMENTUM MANAGEMENT	MODES	2405015	0506			
10507	RMA-ONR	TT&C SPU	COMMAND RMA ON/OFF	MODES	2405016	0507	2		
10507A		TT&C SPU	PARAMETER 1	MODES					
10507B		TT&C SPU	PARAMETER 2	MODES					
10508	RMA-OFFR	TT&C SPU	ALL RMA OFF	MODES	2405020	0508			
10600	DPADERBF	TT&C SPU	DUMP ADA ERROR BUFFER	ERRORS	2406001	0600			
10601	DPINERBF	TT&C SPU	DUMP INTERRUPT ERROR BUFFER	ERRORS	2406002	0601			
10602	DPSBERBF	TT&C SPU	DUMP SINGLE BIT ERROR BUFFER	ERRORS	2406004	0602			
10700	MEMCKENR	TT&C SPU	ENABLE MEMORY CHECKING	MEMCHK	2407000	0700			
10701	MEMCKDIR	TT&C SPU	DISABLE MEMORY CHECKING	MEMCHK	2407003	0701			
11000	LDSPMEMR	TT&C SPU	MEMORY LOAD	UPLINK	2420000	1000	4		
11000A		TT&C SPU	UPPER START ADDRESS (16 BITS)	UPLINK					
11000B		TT&C SPU	LOWER START ADDRESS (16 BITS)	UPLINK					
11000C		TT&C SPU	RANGE	UPLINK					
11000D		TT&C SPU	DATA	UPLINK					0-123 16-BIT DATA WORDS
11100	LDSPTABR	TT&C SPU	SPU TLM TABLE LOAD	SPUTLM	2421001	1100	3		
11100A		TT&C SPU	TABLE NUMBER	SPUTLM					
11100B		TT&C SPU	TABLE RANGE	SPUTLM					
11100C		TT&C SPU	ELEMENTS TO LOAD	SPUTLM					
11101	SPUDUMPR	TT&C SPU	INITIALIZE MEMORY DUMP	SPUTLM	2421002	1101	4		
11101A		TT&C SPU	UPPER DUMP ADDRESS (16 BITS)	SPUTLM					
11101B		TT&C SPU	LOWER DUMP ADDRESS (16 BITS)	SPUTLM					
11101C		TT&C SPU	UPPER DUMP RANGE (16 BITS)	SPUTLM					
11101D		TT&C SPU	LOWER DUMP RANGE (16 BITS)	SPUTLM					
11102	DMPLSTLR	TT&C SPU	INITIALIZE DUMP PREV MEM LOAD	SPUTLM	2421004	1102			
11103	CHKLSTLR	TT&C SPU	PERFORM CHECKSUM PREV MEM LOAD	SPUTLM	2421007	1103			
11104	SPUCHKSR	TT&C SPU	INITIALIZE CHECKSUM	SPUTLM	2421010	1104	4		
11104A		TT&C SPU	UPPER HALF ADDRESS (16 BITS)	SPUTLM					
11104B		TT&C SPU	LOWER HALF ADDRESS (16 BITS)	SPUTLM					
11104C		TT&C SPU	UPPER HALF RANGE (16 BITS)	SPUTLM					
11104D		TT&C SPU	LOWER HALF RANGE (16 BITS)	SPUTLM					
11105	MDSLFMTR	TT&C SPU	SWITCH TABLES	SPUTLM	2421013	1105	1		
11105A		TT&C SPU	TLM MODE	SPUTLM					
11300	LDMACROR	TT&C SPU	UPLOAD A MACRO	STCMD	2423000	1300	3		
11300A		TT&C SPU	MACRO ID	STCMD					
11300B		TT&C SPU	MACRO SIZE	STCMD					
11300C		TT&C SPU	MACRO WORDS	STCMD					3-30 MACR WORDS
11301	DLETMACR	TT&C SPU	DELETE A MACRO	STCMD	2423003	1301	1		
11301A		TT&C SPU	MACRO ID	STCMD					
11302	DUMPMACR	TT&C SPU	DUMP RANGE OF MACROS	STCMD	2423005	1302	1		
11302A		TT&C SPU	MACRO ID AND NUMBER	STCMD					
11303	ABTAMACR	TT&C SPU	ABORT ALL MACROS	STCMD	2423006	1303			
11304	STRTMACR	TT&C SPU	START A MACRO	STCMD	2423011	1304	3		
11304A		TT&C SPU	MACRO ID	STCMD					
11304B		TT&C SPU	UPPER START TIME	STCMD					
11304C		TT&C SPU	LOWER START TIME	STCMD					

11305	ABT-MACR	TT&C SPU	ABORT A MACRO	STCMD	2423012	1305	1		
11305A		TT&C SPU	MACRO ID	STCMD					
11500	DMPCVFQR	TT&C SPU	DUMP CVF QUEUE	CVSTORE	2425000	1500			
11501	DMPCVFER	TT&C SPU	DUMP CVF ERROR QUEUE	CVSTORE	2425003	1501			
11600	STRTAMR	TT&C SPU	ATTMON ON	ATTMON	2426000	1600			
11601	STOPATMR	TT&C SPU	ATTMON OFF	ATTMON	2426003	1601			
11700	AVGSPNPR	TT&C SPU	SET AVG SPIN PERIOD	SPM	2427001	1700	2		
11700A		TT&C SPU	SPIN PERIOD UPPER HALF	SPM					
11700B		TT&C SPU	SPIN PERIOD LOWER HALF	SPM					
11701	NBRPPRSR	TT&C SPU	SET NUMBER OF REMAINING PULSE PAIRS	SPM	2427002	1701	1		
11701A		TT&C SPU	PULSE PAIRS	SPM					
11702	SSPMPPR	TT&C SPU	SET SPM THRUSTER SELECTION	SPM	2427004	1702	1		
11702A		TT&C SPU	THRUSTER SELECTION	SPM					
11703	FCTSPNPR	TT&C SPU	SET SPM FRAC OF SPIN PERIOD	SPM	2427007	1703	2		
11703A		TT&C SPU	SPIN PER FRAC UPPER HALF	SPM					
11703B		TT&C SPU	SPIN PER FRAC LOWER HALF	SPM					
11704	CEP1DELR	TT&C SPU	SET CEP FIRST PULSE DELAY	SPM	2427010	1704	2		
11704A		TT&C SPU	PULSE DELAY UPPER HALF	SPM					
11704B		TT&C SPU	PULSE DELAY LOWER HALF	SPM					
11705	SPMSTCGR	TT&C SPU	SPM STATE CHANGE	SPM	2427013	1705	1		
11705A		TT&C SPU	SPM STATE	SPM					
12400	INCZTIMR	TT&C SPU	INCREMENT Z-TIME	EPHSUP	2444001	2400	2		
12400A		TT&C SPU	UPPER HALF Z-TIME (16 BITS)	EPHSUP					
12400B		TT&C SPU	LOWER HALF Z-TIME (16 BITS)	EPHSUP					
12401	NEWZTIMR	TT&C SPU	NEW Z-TIME	EPHSUP	2444002	2401	2		
12401A		TT&C SPU	UPPER HALF Z-TIME (16 BITS)	EPHSUP					
12401B		TT&C SPU	LOWER HALF Z-TIME (16 BITS)	EPHSUP					
12402	LDBUEPHR	TT&C SPU	LOAD BACKUP EPHEMERIS	EPHSUP	2444004	2402	38		
12402P 01		TT&C SPU	COEFFICIENT REFERENCE TIME UPPER (16 BITS)	EPHSUP					
12402P 02		TT&C SPU	COEFFICIENT REFERENCE TIME LOWER (16 BITS)	EPHSUP					
12402P 03		TT&C SPU	BU EPHEM INCLINATION 1 UPPER	EPHSUP					
12402P 04		TT&C SPU	BU EPHEM INCLINATION 1 MIDDLE	EPHSUP					
12402P 05		TT&C SPU	BU EPHEM INCLINATION 1 LOWER	EPHSUP					
12402P 06		TT&C SPU	BU EPHEM INCLINATION 2 UPPER	EPHSUP					
12402P 07		TT&C SPU	BU EPHEM INCLINATION 2 MIDDLE	EPHSUP					
12402P 08		TT&C SPU	BU EPHEM INCLINATION 2 LOWER	EPHSUP					
12402P 09		TT&C SPU	BU EPHEM INCLINATION 3 UPPER	EPHSUP					
12402P 10		TT&C SPU	BU EPHEM INCLINATION 3 MIDDLE	EPHSUP					
12402P 11		TT&C SPU	BU EPHEM INCLINATION 3 LOWER	EPHSUP					
12402P 12		TT&C SPU	BU EPHEM INCLINATION 4 UPPER	EPHSUP					

12402P 13		TT&C SPU	BU EPHEM INCLINATION 4 MIDDLE	EPHSUP					
12402P 14		TT&C SPU	BU EPHEM INCLINATION 4 LOWER	EPHSUP					
12402P 15		TT&C SPU	BU EPHEM INCLINATION 5 UPPER	EPHSUP					
12402P 16		TT&C SPU	BU EPHEM INCLINATION 5 MIDDLE	EPHSUP					
12402P 17		TT&C SPU	BU EPHEM INCLINATION 5 LOWER	EPHSUP					
12402P 18		TT&C SPU	BU EPHEM INCLINATION 6 UPPER	EPHSUP					
12402P 19		TT&C SPU	BU EPHEM INCLINATION 6 MIDDLE	EPHSUP					
12402P 20		TT&C SPU	BU EPHEM INCLINATION 6 LOWER	EPHSUP					
12402P 21		TT&C SPU	BU EPHEM RIGHT ASCENSION 1 UPPER	EPHSUP					
12402P 22		TT&C SPU	BU EPHEM RIGHT ASCENSION 1 MIDDLE	EPHSUP					
12402P 23		TT&C SPU	BU EPHEM RIGHT ASCENSION 1 LOWER	EPHSUP					
12402P 24		TT&C SPU	BU EPHEM RIGHT ASCENSION 2 UPPER	EPHSUP					
12402P 25		TT&C SPU	BU EPHEM RIGHT ASCENSION 2 MIDDLE	EPHSUP					
12402P 26		TT&C SPU	BU EPHEM RIGHT ASCENSION 2 LOWER	EPHSUP					
12402P 27		TT&C SPU	BU EPHEM RIGHT ASCENSION 3 UPPER	EPHSUP					
12402P 28		TT&C SPU	BU EPHEM RIGHT ASCENSION 3 MIDDLE	EPHSUP					
12402P 29		TT&C SPU	BU EPHEM RIGHT ASCENSION 3 LOWER	EPHSUP					
12402P 30		TT&C SPU	BU EPHEM RIGHT ASCENSION 4 UPPER	EPHSUP					
12402P 31		TT&C SPU	BU EPHEM RIGHT ASCENSION 4 MIDDLE	EPHSUP					
12402P 32		TT&C SPU	BU EPHEM RIGHT ASCENSION 4 LOWER	EPHSUP					
12402P 33		TT&C SPU	BU EPHEM RIGHT ASCENSION 5 UPPER	EPHSUP					
12402P 35		TT&C SPU	BU EPHEM RIGHT ASCENSION 5 MIDDLE	EPHSUP					
12402P 36		TT&C SPU	BU EPHEM RIGHT ASCENSION 5 LOWER	EPHSUP					
12402P 37		TT&C SPU	BU EPHEM RIGHT ASCENSION 6 UPPER	EPHSUP					
12402P 38		TT&C SPU	BU EPHEM RIGHT ASCENSION 6 MIDDLE	EPHSUP					
12402P 39		TT&C SPU	BU EPHEM RIGHT ASCENSION 6 LOWER	EPHSUP					
12403	DMPBEPHR	TT&C SPU	DUMP BACKUP EPHEMERIS	EPHSUP	2444007	2403			

12404	BEPHENAR	TT&C SPU	CHANGE TO BACKUP EPHEMERIS	EPHSUP	2444010	2404			
12405	BEPHDISR	TT&C SPU	CHANGE FROM BACKUP EPHEMERIS	EPHSUP	2444013	2405			
12900	ESARBENR	TT&C SPU	ENABLE ESA RAD BIAS	ESAPR	2451000	2900			
12901	ESARBDIR	TT&C SPU	DISABLE ESA RAD BIAS	ESAPR	2451003	2901			
13201	SNPFENAR	TT&C SPU	ENABLE SK SNP ARRAY SLEW FLAG	THRSEL	2462003	3201			
13202	SNPFDISR	TT&C SPU	DISABLE SK SNP ARRAY SLEW FLAG	THRSEL	2462005	3202			
13203	THRTCNFR	TT&C SPU	THRUSTER CONFIGURATION	THRSEL	2462006	3203	2		
13203A		TT&C SPU	THRUSTER FACE	THRSEL					
13203B		TT&C SPU	THRUSTER SELECTION	THRSEL					
13300	TCMDPWDR	TT&C SPU	SET CMDED PW FOR EACH THRUSTER	TPF	2463001	3300	3		
13300A		TT&C SPU	THRUSTER SELECTION	TPF					
13300B		TT&C SPU	BURNTIME UPPER HALF	TPF					
13300C		TT&C SPU	BURNTIME LOWER HALF	TPF					
13301	STRTTPFR	TT&C SPU	START TPF	TPF	2463002	3301			
13302	STOPTPFR	TT&C SPU	STOP TPF	TPF	2463004	3302			
13500	SELACTR	TT&C SPU	SEL ACTUATOR	PID	2465001	3500	1		
13500A		TT&C SPU	ACTUATOR	PID					
13501	SELUNLDR	TT&C SPU	SEL MOMENTUM UNLOADING ACTUATOR	PID	2465001	3501	1		
13501A		TT&C SPU	UNLOAD ACTUATOR	PID					
13700	PSMONCFR	TT&C SPU	ENABLE/DISABLE SPECIFIED CAPABILITY	PSMON	2467000	3700	2		
13700A		TT&C SPU	CAPABILITY	PSMON					
13700B		TT&C SPU	CAPABILITY STATUS	PSMON					
13701	SELAHDR	TT&C SPU	AMP HOUR DISCHARGE (AHD) SELECTION	PSMON	2467003	3701	1		
13701A		TT&C SPU	AHD SELECTION	PSMON					
13800	LDSHDENR	TT&C SPU	ENABLE LOAD SHEDDING	PSLS	2470000	3800			
13801	LDSHDDIR	TT&C SPU	DISABLE LOAD SHEDDING	PSLS	2470003	3801			
14100	RDMNENAR	TT&C SPU	ENABLE REDMAN	RDMGT	2501001	4100			
14101	RDMNDISR	TT&C SPU	DISABLE REDMAN	RDMGT	2501002	4101			
14102	SRMCMATR	TT&C SPU	SET REDMAN HEALTH STATUS MATRIX	RDMGT	2501004	4102	2		
14102A		TT&C SPU	COMPONENT	RDMGT					
14102B		TT&C SPU	SET DESIRED COMPONENT STATE	RDMGT					
14103	UPRMSWFR	TT&C SPU	UPDATE REDMAN SWITCHING FLAGS	RDMGT	2501007	4103	2		
14103A		TT&C SPU	DEVICE	RDMGT					
14103B		TT&C SPU	DEVICE STATUS	RDMGT					
14104	UPRMTSFR	TT&C SPU	UPDATE TESTING FLAGS	RDMGT	2501010	4104	2		
14104A		TT&C SPU	TEST FLAGS	RDMGT					
14104B		TT&C SPU	TEST FLAG STATUS	RDMGT					
14105	DMPRMHMR	TT&C SPU	DUMP HEALTH MATRIX	RDMGT	2501013	4105			
14106	DMPRMDFR	TT&C SPU	DUMP DEVICE FAILURE LOG	RDMGT	2501015	4106			
14107	DMPRMDSR	TT&C SPU	DUMP DEVICE SWITCHING LOG	RDMGT	2501016	4107			
15000	SPUNOOPR	TT&C SPU	SPU NO OPERATION	CMDX	2520001	5000			
18000	SPCHCONR	TT&C SPU	SETUP PATCH CONNECTION	PATCH MAN	2600000	8000	3		
18000A		TT&C SPU	STARTING ADDRESS OF PATCH CONNECTION	PATCH MAN					
18000B		TT&C SPU	SIZE OF PATCH CONNECTION	PATCH MAN					
18000C		TT&C SPU	PATCH CONNECTION CODE	PATCH MAN					
18001	PCHDISCR	TT&C SPU	DISCONNECT PATCH	PATCH MAN	2600003	8001			
18002	PCHPGADR	TT&C SPU	READJUST PAGE REGISTERS	PATCH MAN	2600005	8002			
18003	CHGPAGER	TT&C SPU	CHANGE PAGE REGISTERS	PATCH MAN	2600006	8003	4		
18003A		TT&C SPU	ADDRESS STATE	PATCH MAN					ONLY ADDRESS STATE 0 IS CURRENTLY VALID
18003B		TT&C SPU	TYPE OF PAGE REGISTER	PATCH MAN					
18003C		TT&C SPU	PAGE CONTENTS	PATCH MAN					

18003D		TT&C SPU	PAGE NUMBER	PATCH MAN					
18004	PCHIFTSR	TT&C SPU	PATCH IFTEST/SELTS	PATCH MAN	2600011	8004	8		
18004A		TT&C SPU	CMX IFTEST ADDRESS	PATCH MAN					
18004B		TT&C SPU	CMX SELTS ADDRESS	PATCH MAN					
18004C		TT&C SPU	RECEIVE CONTROL CONNECTION ADDRESS	PATCH MAN					
18004D		TT&C SPU	RECEIVE CONTROL SIZE	PATCH MAN					
18004E		TT&C SPU	SEND CONTROL CONNECTION ADDRESS	PATCH MAN					
18004F		TT&C SPU	SEND CONTROL SIZE	PATCH MAN					
18004G		TT&C SPU	RECEIVE CONTROL CONNECTION CODE	PATCH MAN					
18004H		TT&C SPU	SEND CONTROL CONNECTION CODE	PATCH MAN					
18005	PCHIFDCR	TT&C SPU	DISCONNECT IFTEST/SELTS PATCH	PATCH MAN	2600012	8005			

REFERENCE

B-1. GPS IIR Orbital Operatons Handbook (OOH), Volume III - Command and Control, G73-OOH-0033B, Martin Marietta Corp. Philadelphia, PA., 13 February 1995.

APPENDIX C

GPS IIR TELEMETRY BY WORD TABLE

Bits							Mnemonic									
MAF	MIF	WRD	No	Start	Stop	Total	Display	LTOC	TLM Description	S/S	Comp	Type	Mode	Units	Conversion Data	Comments
5	5	58	8	0	7	8	+X+YACCT	PXPYACCT	+X+Y ACCESS PNL TEMP	MSS	TCS	AP	All Power-Up	Celsius		
5	7	58	8	0	7	8	+X-YACCT	PXMYACCT	+X-Y ACCESS PNL TEMP	MSS	TCS	AP	All Power-Up	Celsius		
6	1	58	8	0	7	8	+X-YCYLT	PXMYCYLT	+X-Y CENTER CYL TEMP	MSS	TCS	AP	All Power-Up	Celsius		
A	3	10	1	4	4	1	+YSADAST	PYSADAST	SPU A +Y SAD STEPPED	EPS	SAD	DL	All Power-Up		1=No Step 0=Step	
A	3	11	1	4	4	1	+YSADBST	PYSADBST	SPU B +Y SAD STEPPED	EPS	SAD	DL	All Power-Up		1=No Step 0=Step	
6	8	55	1	4	4	1	+YSADDAA	PYSADDAA	+Y SADPOT A DEADBAND INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not in Deadband 1=In Deadband	Power Flag Word
6	8	63	1	4	4	1	+YSADDAB	PYSADDAB	+Y SADPOT A DEADBAND INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not in Deadband 1=In Deadband	Power Flag Word
6	8	55	1	5	5	1	+YSADDBA	PYSADDBA	+Y SADPOT B DEADBAND INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not in Deadband 1=In Deadband	Power Flag Word
6	8	63	1	5	5	1	+YSADDBB	PYSADDBB	+Y SADPOT B DEADBAND INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not in Deadband 1=In Deadband	Power Flag Word
8	5	54	8	0	7	16	+YSADPAA	PYSADPAA	+Y ACTUAL SADPOT (1 OF 2)	ADS	SPU A	S	Normal	radians		
8	5	55	8	0	7	16	+YSADPAA	PYSADPAA	+Y ACTUAL SADPOT (2 OF 2)	ADS	SPU A	S	Normal	radians		
8	7	54	8	0	7	16	+YSADPAA	PYSADPAA	+Y ACTUAL SADPOT (1 OF 2)	ADS	SPU A	S	Thruster	radians		
8	7	55	8	0	7	16	+YSADPAA	PYSADPAA	+Y ACTUAL SADPOT (2 OF 2)	ADS	SPU A	S	Thruster	radians		
8	5	62	8	0	7	16	+YSADPAB	PYSADPAB	+Y ACTUAL SADPOT (1 OF 2)	ADS	SPU B	S	Normal	radians		
8	5	63	8	0	7	16	+YSADPAB	PYSADPAB	+Y ACTUAL SADPOT (2 OF 2)	ADS	SPU B	S	Normal	radians		
8	7	62	8	0	7	16	+YSADPAB	PYSADPAB	+Y ACTUAL SADPOT (1 OF 2)	ADS	SPU B	S	Thruster	radians		
8	7	63	8	0	7	16	+YSADPAB	PYSADPAB	+Y ACTUAL SADPOT (2 OF 2)	ADS	SPU B	S	Thruster	radians		
8	4	54	8	0	7	16	+YSADPEA	PYSADPEA	+Y ESTIMATED SADPOT (1 OF 2)	ADS	SPU A	S	Normal	radians		
8	4	55	8	0	7	16	+YSADPEA	PYSADPEA	+Y ESTIMATED SADPOT (2 OF 2)	ADS	SPU A	S	Normal	radians		
8	4	52	8	0	7	16	+YSADPEA	PYSADPEA	+Y ESTIMATED SADPOT (1 OF 2)	ADS	SPU A	S	Thruster	radians		
8	4	53	8	0	7	16	+YSADPEA	PYSADPEA	+Y ESTIMATED SADPOT (2 OF 2)	ADS	SPU A	S	Thruster	radians		
8	4	62	8	0	7	16	+YSADPEB	PYSADPEB	+Y ESTIMATED SADPOT (1 OF 2)	ADS	SPU B	S	Normal	radians		
8	4	63	8	0	7	16	+YSADPEB	PYSADPEB	+Y ESTIMATED SADPOT (2 OF 2)	ADS	SPU B	S	Normal	radians		
8	4	60	8	0	7	16	+YSADPEB	PYSADPEB	+Y ESTIMATED SADPOT (1 OF 2)	ADS	SPU B	S	Thruster	radians		
8	4	61	8	0	7	16	+YSADPEB	PYSADPEB	+Y ESTIMATED SADPOT (2 OF 2)	ADS	SPU B	S	Thruster	radians		
2	3	59	8	0	7	8	+YSADT	PYSADT	+Y SAD TEMP	EPS	SAD	AP	All Power-Up	Celsius		
6	8	55	1	0	0	1	+YSADVAA	PYSADVAA	+Y SADPOT A VALID INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not Valid 1=Valid	Power Flag Word
6	8	63	1	0	0	1	+YSADVAB	PYSADVAB	+Y SADPOT A VALID INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not Valid 1=Valid	Power Flag Word
6	8	55	1	1	1	1	+YSADVBA	PYSADVBA	+Y SADPOT B VALID INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not Valid 1=Valid	Power Flag Word
6	8	63	1	1	1	1	+YSADVBB	PYSADVBB	+Y SADPOT B VALID INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not Valid 1=Valid	Power Flag Word
8	6	54	8	0	7	16	+YSAERRA	PYSAERRA	+Y SOLAR ARRAY ERROR (1 OF 2)	ADS	SPU A	S	Normal	radians		
8	6	55	8	0	7	16	+YSAERRA	PYSAERRA	+Y SOLAR ARRAY ERROR (2 OF 2)	ADS	SPU A	S	Normal	radians		
8	8	52	8	0	7	16	+YSAERRA	PYSAERRA	+Y SOLAR ARRAY ERROR (1 OF 2)	ADS	SPU A	S	Thruster	radians		
8	8	53	8	0	7	16	+YSAERRA	PYSAERRA	+Y SOLAR ARRAY ERROR (2 OF 2)	ADS	SPU A	S	Thruster	radians		
8	6	62	8	0	7	16	+YSAERRB	PYSAERRB	+Y SOLAR ARRAY ERROR (1 OF 2)	ADS	SPU B	S	Normal	radians		
8	6	63	8	0	7	16	+YSAERRB	PYSAERRB	+Y SOLAR ARRAY ERROR (2 OF 2)	ADS	SPU B	S	Normal	radians		
8	8	60	8	0	7	16	+YSAERRB	PYSAERRB	+Y SOLAR ARRAY ERROR (1 OF 2)	ADS	SPU B	S	Thruster	radians		
8	8	61	8	0	7	16	+YSAERRB	PYSAERRB	+Y SOLAR ARRAY ERROR (2 OF 2)	ADS	SPU B	S	Thruster	radians		
5	6	59	8	0	7	8	+YSAIHGT	PYSAIHGT	+Y S/A INNER HNGE DMP TMP	EPS	S/A	AP	All Power-Up	Celsius		Zero-filled in Format 1
3	6	59	8	0	7	8	+YSAMHGT	PYSAMHGT	+Y S/A MIDDLE HNGE DMP TMP	EPS	S/A	AP	All Power-Up	Celsius		Zero-filled in Format 1
1	6	59	8	0	7	8	+YSAOHGT	PYSAOHGT	+Y S/A OUTER HNGE DMP TMP	EPS	S/A	AP	All Power-Up	Celsius		Zero-filled in Format 1

6	5	56	8	0	7	8	+YSAT	PYSAT	+Y S/A PNL TEMP (INBOARD)	EPS	S/A	AH	All Power-Up	Celsius		
1	1	58	8	0	7	8	+YSATAP1	PYSATAP1	+Y SAD POS POT 1 TAP	EPS	SAD	AP	All Power-Up	degrees		
1	1	59	8	0	7	8	+YSATAP2	PYSATAP2	+Y SAD POS POT 2 TAP	EPS	SAD	AP	All Power-Up	degrees		
1	3	58	8	0	7	8	+YSATOP1	PYSATOP1	+Y SAD POS POT 1 TAP	EPS	SAD	AP	All Power-Up	degrees		
1	3	59	8	0	7	8	+YSATOP2	PYSATOP2	+Y SAD POS POT 2 TAP	EPS	SAD	AP	All Power-Up	degrees		
6	6	56	8	0	7	8	+YSAUNC	PYSAUNC	+Y S/A UNSHUNTED CURRENT	EPS	S/A	AH	All Power-Up	amps		
3	3	59	8	0	7	8	+YSHNTT	PYSHNTT	+Y SHUNT TEMP	EPS	SBA	AP	All Power-Up	Celsius		
A	1	32	8	0	7	8	+YSHTVT1	PYSHTVT1	+Y SHUNT TAP VOLTAGE (T2259)	EPS	SBA	AH	All Power-Up	volts		
A	5	32	8	0	7	8	+YSHTVT2	PYSHTVT2	+Y SHUNT TAP VOLTAGE (T2260)	EPS	SBA	AH	All Power-Up	volts		
6	7	58	8	0	7	8	-X+YACCT	MXPYACCT	-X+Y ACCESS PNL TEMP	MSS	TCS	AP	All Power-Up	Celsius		
5	6	58	8	0	7	8	-X-YACCT	MXMYACCT	-X-Y ACCESS PNL TEMP	MSS	TCS	AP	All Power-Up	Celsius		
7	1	58	8	0	7	8	-X-YCYLT	MXMYCYLT	-X-Y CENTER CYL TEMP	MSS	TCS	AP	All Power-Up	Celsius		
7	8	57	8	0	7	8	-XPNLDT	MXPNLDT	-X PAYLOAD PNL TEMP D	MSS	TCS	AP	All Power-Up	Celsius		
2	1	58	8	0	7	8	-XPNLET	MXPNLET	-X PAYLOAD PNL TEMP E	MSS	TCS	AP	All Power-Up	Celsius		
A	3	10	1	1	1	1	-YSADAST	MYSADAST	SPU A -Y SAD STEPPED	EPS	SAD	DL	All Power-Up		1=No Step 0=Step	
A	3	11	1	1	1	1	-YSADBST	MYSADBST	SPU B -Y SAD STEPPED	EPS	SAD	DL	All Power-Up		1=No Step 0=Step	
6	8	55	1	6	6	1	-YSADDAA	MYSADDAA	-Y SADPOT A DEADBAND INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not in Deadband 1=In Deadband	Power Flag Word
6	8	63	1	6	6	1	-YSADDAB	MYSADDAB	-Y SADPOT A DEADBAND INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not in Deadband 1=In Deadband	Power Flag Word
6	8	55	1	7	7	1	-YSADDBA	MYSADDBA	-Y SADPOT B DEADBAND INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not in Deadband 1=In Deadband	Power Flag Word
6	8	63	1	7	7	1	-YSADDBB	MYSADDBB	-Y SADPOT B DEADBAND INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not in Deadband 1=In Deadband	Power Flag Word
8	6	52	8	0	7	16	-YSADPAA	MYSADPAA	-Y ACTUAL SADPOT (1 OF 2)	ADS	SPU A	S	Normal	radians		
8	6	53	8	0	7	16	-YSADPAA	MYSADPAA	-Y ACTUAL SADPOT (2 OF 2)	ADS	SPU A	S	Normal	radians		
8	7	52	8	0	7	16	-YSADPAA	MYSADPAA	-Y ACTUAL SADPOT (1 OF 2)	ADS	SPU A	S	Thruster	radians		
8	7	53	8	0	7	16	-YSADPAA	MYSADPAA	-Y ACTUAL SADPOT (2 OF 2)	ADS	SPU A	S	Thruster	radians		
8	6	60	8	0	7	16	-YSADPAB	MYSADPAB	-Y ACTUAL SADPOT (1 OF 2)	ADS	SPU B	S	Normal	radians		
8	6	61	8	0	7	16	-YSADPAB	MYSADPAB	-Y ACTUAL SADPOT (2 OF 2)	ADS	SPU B	S	Normal	radians		
8	7	60	8	0	7	16	-YSADPAB	MYSADPAB	-Y ACTUAL SADPOT (1 OF 2)	ADS	SPU B	S	Thruster	radians		
8	7	61	8	0	7	16	-YSADPAB	MYSADPAB	-Y ACTUAL SADPOT (2 OF 2)	ADS	SPU B	S	Thruster	radians		
8	5	52	8	0	7	16	-YSADPEA	MYSADPEA	-Y ESTIMATED SADPOT (1 OF 2)	ADS	SPU A	S	Normal	radians		
8	5	53	8	0	7	16	-YSADPEA	MYSADPEA	-Y ESTIMATED SADPOT (2 OF 2)	ADS	SPU A	S	Normal	radians		
8	4	54	8	0	7	16	-YSADPEA	MYSADPEA	-Y ESTIMATED SADPOT (1 OF 2)	ADS	SPU A	S	Thruster	radians		
8	4	55	8	0	7	16	-YSADPEA	MYSADPEA	-Y ESTIMATED SADPOT (2 OF 2)	ADS	SPU A	S	Thruster	radians		
8	5	60	8	0	7	16	-YSADPEB	MYSADPEB	-Y ESTIMATED SADPOT (1 OF 2)	ADS	SPU B	S	Normal	radians		
8	5	61	8	0	7	16	-YSADPEB	MYSADPEB	-Y ESTIMATED SADPOT (2 OF 2)	ADS	SPU B	S	Normal	radians		
8	4	62	8	0	7	16	-YSADPEB	MYSADPEB	-Y ESTIMATED SADPOT (1 OF 2)	ADS	SPU B	S	Thruster	radians		
8	4	63	8	0	7	16	-YSADPEB	MYSADPEB	-Y ESTIMATED SADPOT (2 OF 2)	ADS	SPU B	S	Thruster	radians		
2	4	59	8	0	7	8	-YSADT	MYSADT	-Y SAD TEMP	EPS	SAD	AP	All Power-Up	Celsius		
6	8	55	1	2	2	1	-YSADVAA	MYSADVAA	-Y SADPOT A VALID INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not Valid 1=Valid	Power Flag Word
6	8	63	1	2	2	1	-YSADVAB	MYSADVAB	-Y SADPOT A VALID INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not Valid 1=Valid	Power Flag Word
6	8	55	1	3	3	1	-YSADVBA	MYSADVBA	-Y SADPOT B VALID INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not Valid 1=Valid	Power Flag Word
6	8	63	1	3	3	1	-YSADVBB	MYSADVBB	-Y SADPOT B VALID INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not Valid 1=Valid	Power Flag Word
8	7	52	8	0	7	16	-YSAERRA	MYSAERRA	-Y SOLAR ARRAY ERROR (1 OF 2)	ADS	SPU A	S	Normal	radians		
8	7	53	8	0	7	16	-YSAERRA	MYSAERRA	-Y SOLAR ARRAY ERROR (2 OF 2)	ADS	SPU A	S	Normal	radians		
8	8	54	8	0	7	16	-YSAERRA	MYSAERRA	-Y SOLAR ARRAY ERROR (1 OF 2)	ADS	SPU A	S	Thruster	radians		
8	8	55	8	0	7	16	-YSAERRA	MYSAERRA	-Y SOLAR ARRAY ERROR (2 OF 2)	ADS	SPU A	S	Thruster	radians		
8	7	60	8	0	7	16	-YSAERRB	MYSAERRB	-Y SOLAR ARRAY ERROR (1 OF 2)	ADS	SPU B	S	Normal	radians		
8	7	61	8	0	7	16	-YSAERRB	MYSAERRB	-Y SOLAR ARRAY ERROR (2 OF 2)	ADS	SPU B	S	Normal	radians		

8	8	62	8	0	7	16	-YSAERRB	MYSAERRB	-Y SOLAR ARRAY ERROR (1 OF 2)	ADS	SPU B	S	Thruster	radians		
8	8	63	8	0	7	16	-YSAERRB	MYSAERRB	-Y SOLAR ARRAY ERROR (2 OF 2)	ADS	SPU B	S	Thruster	radians		
6	6	59	8	0	7	8	-YSAIHGT	MYSAIHGT	-Y S/A INNER HNGE DMP TEMP	EPS	S/A	AP	All Power-Up	Celsius		Zero-filled in Format 1
4	6	59	8	0	7	8	-YSAMHGT	MYSAMHGT	-Y S/A MIDDLE HNGE DMP TEMP	EPS	S/A	AP	All Power-Up	Celsius		Zero-filled in Format 1
2	6	59	8	0	7	8	-YSAOHGT	MYSAOHGT	-Y S/A OUTER HNGE DMP TEMP	EPS	S/A	AP	All Power-Up	Celsius		Zero-filled in Format 1
8	3	56	8	0	7	8	-YSAT	MYSAT	-Y S/A PNL TEMP (OUTBOARD)	EPS	S/A	AH	All Power-Up	Celsius		
1	2	58	8	0	7	8	-YSATAP1	MYSATAP1	-Y SAD POS POT 1 TAP	EPS	SAD	AP	All Power-Up	degrees		
1	2	59	8	0	7	8	-YSATAP2	MYSATAP2	-Y SAD POS POT 2 TAP	EPS	SAD	AP	All Power-Up	degrees		
1	4	58	8	0	7	8	-YSATOP1	MYSATOP1	-Y SAD POS POT 1 TOP	EPS	SAD	AP	All Power-Up	degrees		
1	4	59	8	0	7	8	-YSATOP2	MYSATOP2	-Y SAD POS POT 2 TOP	EPS	SAD	AP	All Power-Up	degrees		
8	4	56	8	0	7	8	-YSAUNC	MYSAUNC	-Y S/A UNSHUNTED CURRENT	EPS	S/A	AH	All Power-Up	amps		
3	4	59	8	0	7	8	-YSHNTT	MYSHNTT	-Y SHUNT TEMP	EPS	SBA	AP	All Power-Up	Celsius		
A	1	33	8	0	7	8	-YSHTVT1	MYSHTVT1	-Y SHUNT TAP VOLTAGE (T2259)	EPS	SBA	AH	All Power-Up	volts		
A	5	33	8	0	7	8	-YSHTVT2	MYSHTVT2	-Y SHUNT TAP VOLTAGE (T2260)	EPS	SBA	AH	All Power-Up	volts		
6	7	56	8	0	7	8	10BDT	L10BDT	REA10 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
A	1	41	1	6	6	1	10MHZA	L10MHZA	10.23 MHZ CLOCK SIGNAL TO MDU A	TNP	MDU	DL	All Power-Up		1=Signal Present 0=Signal Not Present	
A	1	42	1	6	6	1	10MHZB	L10MHZB	10.23 MHZ CLOCK SIGNAL TO MDU B	TNP	MDU	DL	All Power-Up		1=Signal Present 0=Signal Not Present	
6	2	57	8	0	7	8	10VT	L10VT	REA10 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
5	8	56	8	0	7	8	11BDT	L11BDT	REA11 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
6	3	57	8	0	7	8	11VT	L11VT	REA11 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
6	8	56	8	0	7	8	12BDT	L12BDT	REA12 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
3	7	57	8	0	7	8	12VT	L12VT	REA12 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
7	7	56	8	0	7	8	13BDT	L13BDT	REA13 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
A	1	41	1	5	5	1	13MHZA	L13MHZA	13.4 MHZ CLOCK SIGNAL TO MDU A	TNP	MDU	DL	All Power-Up		1=Signal Present 0=Signal Not Present	
A	1	42	1	5	5	1	13MHZB	L13MHZB	13.4 MHZ CLOCK SIGNAL TO MDU B	TNP	MDU	DL	All Power-Up		1=Signal Present 0=Signal Not Present	
3	8	57	8	0	7	8	13VT	L13VT	REA13 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
8	7	56	8	0	7	8	14BDT	L14BDT	REA14 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
8	1	57	8	0	7	8	14VT	L14VT	REA14 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
7	8	56	8	0	7	8	15BDT	L15BDT	REA15 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
6	7	57	8	0	7	8	15VT	L15VT	REA15 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
8	8	56	8	0	7	8	16BDT	L16BDT	REA16 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
NA	NA	NA	NA	2	NA	1	16EOMREQ	16EOMREQ	16 EOMS REQUEST	NDS	BDP-IP	S	SSOH			167
6	8	57	8	0	7	8	16VT	L16VT	REA16 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
NA	NA	NA	NA	6	NA	1	1750ASM	1750ASM	1750A ARITHERRREPORT	NDS	BDP	S	SSOH			3062
1	7	56	8	0	7	8	1BDT	L1BDT	REA01 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
5	1	57	8	0	7	8	1VT	L1VT	REA01 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
2	7	56	8	0	7	8	2BDT	L2BDT	REA02 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
5	2	57	8	0	7	8	2VT	L2VT	REA02 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
1	8	56	8	0	7	8	3BDT	L3BDT	REA03 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
5	3	57	8	0	7	8	3VT	L3VT	REA03 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
2	8	56	8	0	7	8	4BDT	L4BDT	REA04 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
2	7	57	8	0	7	8	4VT	L4VT	REA04 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
3	7	56	8	0	7	8	5BDT	L5BDT	REA05 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
2	8	57	8	0	7	8	5VT	L5VT	REA05 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
4	7	56	8	0	7	8	6BDT	L6BDT	REA06 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
3	1	57	8	0	7	8	6VT	L6VT	REA06 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
3	8	56	8	0	7	8	7BDT	L7BDT	REAO7 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
5	7	57	8	0	7	8	7VT	L7VT	REA07 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
4	8	56	8	0	7	8	8BDT	L8BDT	REA08 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
NA	NA	NA	NA	0	NA	16	8DATAEND	8DATAEND	SEC 8,16 DATAENDADDR	NDS	BDP-MP	S	SSOH			81
5	8	57	8	0	7	8	8VT	L8VT	REA08 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
5	7	56	8	0	7	8	9BDT	L9BDT	REA09 CATBED TEMP	RCS	REA	AH	All Power-Up	Celsius		
NA	NA	NA	NA	0	NA	16	9DATAEND	9DATAEND	SEC 9,16 DATAENDADDR	NDS	BDP-MP	S	SSOH			83

6	1	57	8	0	7	8	9VT	L9VT	REA09 VALVE TEMP	RCS	REA	AP	All Power-Up	Celsius		
A	A	8	1	0	0	1	ACPTSTAT	ACPTSTAT	CDU COMMAND ACCEPT/REJECT STATUS	TT&C	CDU	S	All Power-Up		1=Cmd Accepted 0=Cmd Rejected	
3	4	55	1	4	4	1	ACTINDA	ACTINDA	ACTUATOR INDICATOR	TT&C	SPU A	S	Normal Thruster		0=RWA 1=Thruster	ADS Flag Word
3	4	63	1	4	4	1	ACTINDB	ACTINDB	ACTUATOR INDICATOR	TT&C	SPU B	S	Normal Thruster		0=RWA 1=Thruster	ADS Flag Word
6	8	52	1	1	1	1	ADAERRA	ADAERRA	ADA ERROR INDICATOR	TT&C	SPU A	S	Early Orbit		0=No ADA Error 1=ADA Error	TLM (Error) Flag Word 52 (first word)
3	6	52	1	1	1	1	ADAERRA	ADAERRA	ADA ERROR INDICATOR	TT&C	SPU A	S	Normal Thruster		0=No ADA Error 1=ADA Error	TLM (Error) Flag Word 52 (first word)
6	8	60	1	1	1	1	ADAERRB	ADAERRB	ADA ERROR INDICATOR	TT&C	SPU B	S	Early Orbit		0=No ADA Error 1=ADA Error	TLM (Error) Flag Word 60 (first word)
3	6	60	1	1	1	1	ADAERRB	ADAERRB	ADA ERROR INDICATOR	TT&C	SPU B	S	Normal Thruster		0=No ADA Error 1=ADA Error	TLM (Error) Flag Word 60 (first word)
NA	NA	NA	NA	4	NA	1	ADAEXSM	ADAEXSM	ADA EXCEPTION REPORT	NDS	BDP	S	SSOH			3062
NA	NA	NA	NA	0	NA	16	ADATAEND	ADATAEND	SEC A,16 DATAENDADDR	NDS	BDP-MP	S	SSOH			85
NA	NA	NA	NA	0	NA	8	ADCERROR	ADCERROR	ADC ERROR CUMU COUNT	NDS	BDP-IP	S	SSOH			157
6	8	52	1	5	5	1	ADEENA	ADEENA	ARRAY DRIVE ELECTRONICS	TT&C	SPU A	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 52 (lower half-first word)
7	4	54	1	5	5	1	ADEENA	ADEENA	ARRAY DRIVE ELECTRONICS	TT&C	SPU A	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 54 (lower half-first word)
6	8	60	1	5	5	1	ADEENB	ADEENB	ARRAY DRIVE ELECTRONICS	TT&C	SPU B	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 60 (lower half-first word)
7	4	62	1	5	5	1	ADEENB	ADEENB	ARRAY DRIVE ELECTRONICS	TT&C	SPU B	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 62 (lower half-first word)
6	8	52	1	2	2	1	ADEXSTRA	ADEXSTRA	SPU ADE XSTRAP	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 52 (lower half-first word)
7	4	54	1	2	2	1	ADEXSTRA	ADEXSTRA	SPU ADE XSTRAP	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 54 (lower half-first word)
6	8	60	1	2	2	1	ADEXSTRB	ADEXSTRB	SPU ADE XSTRAP	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 60 (lower half-first word)
7	4	62	1	2	2	1	ADEXSTRB	ADEXSTRB	SPU ADE XSTRAP	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 62 (lower half-first word)
3	4	54	1	4	4	1	ADLBKUPA	ADLBKUPA	ADL BACKUP MODE INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not Using B/U Ephem 1=Using B/U Ephen	ADS Flag Word
3	4	62	1	4	4	1	ADLBKUPB	ADLBKUPB	ADL BACKUP MODE INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not Using B/U Ephem 1=Using B/U Ephen	ADS Flag Word
4	4	55	1	4	4	1	ADLMODEA	ADLMODEA	ADL SUBMODE	TT&C	SPU A	S	Normal		0=Ideal SNP 1=Low Beta SNP	Mode Flag Word
3	4	53	1	4	4	1	ADLMODEA	ADLMODEA	ADL SUBMODE	TT&C	SPU A	S	Thruster		0=Ideal SNP 1=Low Beta SNP	Mode Flag Word
4	4	63	1	4	4	1	ADLMODEB	ADLMODEB	ADL SUBMODE	TT&C	SPU B	S	Normal		0=Ideal SNP 1=Low Beta SNP	Mode Flag Word
4	4	61	1	4	4	1	ADLMODEB	ADLMODEB	ADL SUBMODE	TT&C	SPU B	S	Thruster		0=Ideal SNP 1=Low Beta SNP	Mode Flag Word
4	4	54	3	0	2	3	ADSMODEA	ADSMODEA	CURRENT ADS MODE	TT&C	SPU A	S	Normal		0=Off 1=RN 2=SSH 3=SHES 4=EAH 5=SK 6=SNP 7=EHYS	Mode Flag Word
3	4	52	3	0	2	3	ADSMODEA	ADSMODEA	CURRENT ADS MODE	TT&C	SPU A	S	Thruster		0=Off 1=RN 2=SSH 3=SHES 4=EAH 5=SK 6=SNP 7=EHYS	Mode Flag Word

4	4	62	3	0	2	3	ADSMODEB	ADSMODEB	CURRENT ADS MODE	TT&C	SPU B	S	Normal		0=Off 1=RN 2=SSH 3=SHES 4=EAH 5=SK 6=SNP 7=EHYS	Mode Flag Word
3	4	60	3	0	2	3	ADSMODEB	ADSMODEB	CURRENT ADS MODE	TT&C	SPU B	S	Thruster		0=Off 1=RN 2=SSH 3=SHES 4=EAH 5=SK 6=SNP 7=EHYS	Mode Flag Word
4	4	54	2	3	4	2	ADSSUBMA	ADSSUBMA	CURRENT ADS SUBMODE	TT&C	SPU A	S	Normal		0=EA 1=EH 2=SS 3=SA	Mode Flag Word
3	4	52	2	3	4	2	ADSSUBMA	ADSSUBMA	CURRENT ADS SUBMODE	TT&C	SPU A	S	Thruster		0=EA 1=EH 2=SS 3=SA	Mode Flag Word
4	4	62	2	3	4	2	ADSSUBMB	ADSSUBMB	CURRENT ADS SUBMODE	TT&C	SPU B	S	Normal		0=EA 1=EH 2=SS 3=SA	Mode Flag Word
3	4	60	2	3	4	2	ADSSUBMB	ADSSUBMB	CURRENT ADS SUBMODE	TT&C	SPU B	S	Thruster		0=EA 1=EH 2=SS 3=SA	Mode Flag Word
4	1	57	8	0	7	8	AKM1AT	AKM1AT	AKM TEMP 1A	PSS	AKM	AP	All Power-Up	Celsius		
4	2	57	8	0	7	8	AKM1BT	AKM1BT	AKM TEMP 1B	PSS	AKM	AP	All Power-Up	Celsius		
4	3	57	8	0	7	8	AKM2AT	AKM2AT	AKM TEMP 2A	PSS	AKM	AP	All Power-Up	Celsius		
2	1	57	8	0	7	8	AKM2BT	AKM2BT	AKM TEMP 2B	PSS	AKM	AP	All Power-Up	Celsius		
A	4	10	1	7	7	1	AKMARMA	AKMARMA	OCU A PYRO (AKM) ARMED	PSS	AKM	DL	All Power-Up		1=Armed 0=Disarmed	
A	4	11	1	7	7	1	AKMARMB	AKMARMB	OCU B PYRO (AKM) ARMED	PSS	AKM	DL	All Power-Up		1=Armed 0=Disarmed	
A	2	16	1	2	2	1	AKMHTRA	AKMHRTA	AKM HEATER HIGH POWER ON/OFF	PSS	AKM	S	All Power-Up		1=On 0=Off	
A	2	16	1	6	6	1	AKMHTRB	AKMHRTB	AKM HEATER LOW POWER ON/OFF	PSS	AKM	S	All Power-Up		1=On 0=Off	
7	5	52	8	0	7	16	ALPHAA	ALPHAA	ALPHA ANGLE (1 OF 2)	ADS	SPU A	S	Normal	radians		
7	5	53	8	0	7	16	ALPHAA	ALPHAA	ALPHA ANGLE (2 OF 2)	ADS	SPU A	S	Normal	radians		
6	5	54	8	0	7	16	ALPHAA	ALPHAA	ALPHA ANGLE (1 OF 2)	ADS	SPU A	S	Thruster	radians		
6	5	55	8	0	7	16	ALPHAA	ALPHAA	ALPHA ANGLE (2 OF 2)	ADS	SPU A	S	Thruster	radians		
7	5	60	8	0	7	16	ALPHAB	ALPHAB	ALPHA ANGLE (1 OF 2)	ADS	SPU B	S	Normal	radians		
7	5	61	8	0	7	16	ALPHAB	ALPHAB	ALPHA ANGLE (2 OF 2)	ADS	SPU B	S	Normal	radians		
6	5	62	8	0	7	16	ALPHAB	ALPHAB	ALPHA ANGLE (1 OF 2)	ADS	SPU B	S	Thruster	radians		
6	5	63	8	0	7	16	ALPHAB	ALPHAB	ALPHA ANGLE (2 OF 2)	ADS	SPU B	S	Thruster	radians		
A	7	10	1	0	0	1	AMEOKB1	AMEOKB1	SPU A MEOK BIT1	TT&C	SPU	DL	All Power-Up		1=CPU A Not OK 0=CPU A OK	
A	7	10	1	1	1	1	AMEOKB2	AMEOKB2	SPU A MEOK BIT2	TT&C	SPU	DL	All Power-Up		1=CPU A Not OK 0=CPU A OK	
A	7	64	1	3	3	1	ANTSELA	ANTSELA	S-BAND ANT SW A POSITION	TT&C	SBT	DL	All Power-Up		1=Pos 1 Selected 0=Pos 2 Selected	See Antenna Config Table
A	8	64	1	3	3	1	ANTSELB	ANTSELB	S-BAND ANT SW B POSITION	TT&C	SBT	DL	All Power-Up		1=Pos 1 Selected 0=Pos 2 Selected	See Antenna Config Table
NA	NA	NA	NA	4	NA	1	ASOHIMSK	ASOHIMSK	ANALOG SOH INT MASK	NDS	BDY	S	SSOH			211
NA	NA	NA	NA	7	NA	1	ASOHSERR	ASOHSERR	BDY-P INTERSTATBT:ANSOH	NDS	BDY	S	SSOH			254
A	1	52	4	0	3	4	ATMESIDA	ATMESIDA	ATTITUDE MEASUREMENT ID	TT&C	SPU A	S	Early Orbit		1=CEP 2=HCI 1 LE 3=HCI 1 TE 4=HCI 2 LE 5=HCI 2 TE 0 AND 6-15=SPARE	ATTMON Record Word (first word)
A	3	52	4	0	3	4	ATMESIDA	ATMESIDA	ATTITUDE MEASUREMENT ID	TT&C	SPU A	S	Early Orbit		1=CEP 2=HCI 1 LE 3=HCI 1 TE 4=HCI 2 LE 5=HCI 2 TE 0 AND 6-15=SPARE	ATTMON Record Word (first word)

A	5	52	4	0	3	4	ATMESIDA	ATMESIDA	ATTITUDE MEASUREMENT ID	TT&C	SPU A	S	Early Orbit		1=CEP 2=HCI 1 LE 3=HCI 1 TE 4=HCI 2 LE 5=HCI 2 TE 0 AND 6-15=SPARE	ATTMON Record Word (first word)
A	7	52	4	0	3	4	ATMESIDA	ATMESIDA	ATTITUDE MEASUREMENT ID	TT&C	SPU A	S	Early Orbit		1=CEP 2=HCI 1 LE 3=HCI 1 TE 4=HCI 2 LE 5=HCI 2 TE 0 AND 6-15=SPARE	ATTMON Record Word (first word)
A	1	60	4	0	3	4	ATMESIDB	ATMESIDB	ATTITUDE MEASUREMENT ID	TT&C	SPU B	S	Early Orbit		1=CEP 2=HCI 1 LE 3=HCI 1 TE 4=HCI 2 LE 5=HCI 2 TE 0 AND 6-15=SPARE	ATTMON Record Word (first word)
A	3	60	4	0	3	4	ATMESIDB	ATMESIDB	ATTITUDE MEASUREMENT ID	TT&C	SPU B	S	Early Orbit		1=CEP 2=HCI 1 LE 3=HCI 1 TE 4=HCI 2 LE 5=HCI 2 TE 0 AND 6-15=SPARE	ATTMON Record Word (first word)
A	5	60	4	0	3	4	ATMESIDB	ATMESIDB	ATTITUDE MEASUREMENT ID	TT&C	SPU B	S	Early Orbit		1=CEP 2=HCI 1 LE 3=HCI 1 TE 4=HCI 2 LE 5=HCI 2 TE 0 AND 6-15=SPARE	ATTMON Record Word (first word)
A	7	60	4	0	3	4	ATMESIDB	ATMESIDB	ATTITUDE MEASUREMENT ID	TT&C	SPU B	S	Early Orbit		1=CEP 2=HCI 1 LE 3=HCI 1 TE 4=HCI 2 LE 5=HCI 2 TE 0 AND 6-15=SPARE	ATTMON Record Word (first word)
A	4	16	1	3	3	1	ATO1	ATO1	S-BAND DWNLNK 1 ATO	TT&C	SBT	S	All Power-Up		1=Disabled 0=Enabled	
A	4	16	1	7	7	1	ATO2	ATO2	S-BAND DWNLNK 2 ATO	TT&C	SBT	S	All Power-Up		1=Disabled 0=Enabled	
2	8	55	1	7	7	1	ATTMONA	ATTMONA	ATTMON RUNNING FLAG	ADS	SPU A	S	Early Orbit		1=Running 0=Not Running	
2	8	63	1	7	7	1	ATTMONB	ATTMONB	ATTMON RUNNING FLAG	ADS	SPU B	S	Early Orbit		1=Running 0=Not Running	
NA	NA	NA	NA	7	NA	1	AUTOCMD	AUTOCMD	OVERRIDE AUTO CMDING	NDS	BDP	S	SSOH			3012
A	2	11	1	7	7	1	B1C17BY	B1C17BY	-X BATT 1 CELL 17 BYPASSED	EPS	BATT	DL	All Power-Up		1=Not Bypassed 0=Bypassed	
A	2	11	1	0	0	1	B1C17OP	B1C17OP	-X BATT1 CELL 17 BYPASS OPEN	EPS	BATT	DL	All Power-Up		1=Diode 0=Short	
5	3	59	8	0	7	8	B1P8AT	B1P8AT	-X BATT 1-8 TEMP A	EPS	BATT	AP	All Power-Up	Celsius		
7	3	59	8	0	7	8	B1P8BT	B1P8BT	-X BATT 1-8 TEMP B	EPS	BATT	AP	All Power-Up	Celsius		
5	4	59	8	0	7	8	B1P9AT	B1P9AT	-X BATT 1-9 TEMP A	EPS	BATT	AP	All Power-Up	Celsius		
7	4	59	8	0	7	8	B1P9BT	B1P9BT	-X BATT 1-9 TEMP B	EPS	BATT	AP	All Power-Up	Celsius		
7	6	56	8	0	7	8	B1PK9V	B1PK9V	-X BATT 19-PACK VOLTAGE	EPS	BATT	AH	All Power-Up	volts		
A	2	10	1	7	7	1	B2C17BY	B2C17BY	-X BATT 2 CELL 17 BYPASSED	EPS	BATT	DL	All Power-Up		1=Not Bypassed 0=Bypassed	
A	2	10	1	0	0	1	B2C17OP	B2C17OP	+X BATT2 CELL 17 BYPASS OPEN	EPS	BATT	DL	All Power-Up		1=Diode 0=Short	
4	3	59	8	0	7	8	B2P8AT	B2P8AT	+X BATT 2-8 TEMP A	EPS	BATT	AP	All Power-Up	Celsius		
6	3	59	8	0	7	8	B2P8BT	B2P8BT	+X BATT 2-8 TEMP B	EPS	BATT	AP	All Power-Up	Celsius		
4	4	59	8	0	7	8	B2P9AT	B2P9AT	+X BATT 2-9 TEMP A	EPS	BATT	AP	All Power-Up	Celsius		
6	4	59	8	0	7	8	B2P9BT	B2P9BT	+X BATT 2-9 TEMP B	EPS	BATT	AP	All Power-Up	Celsius		
7	2	56	8	0	7	8	B2PK9V	B2PK9V	+X BATT 2 9-PACK VOLTAGE	EPS	BATT	AH	All Power-Up	volts		
NA	NA	NA	NA	2	NA	1	BANDSLCT	BANDSLCT	HIGH BAND/LOW BAND	NDS	BDP	S	SSOH			3051
4	5	58	8	0	7	8	BASPNLBT	BASPNLBT	BASE PNL TEMP B	MSS	TCS	AP	All Power-Up	Celsius		
6	6	54	8	0	7	16	BAT1AHDA	BAT1AHDA	AHD BATT1 (1 OF 2)	EPS	SPU A	S	Normal Thruster	amp-hours		
6	6	55	8	0	7	16	BAT1AHDA	BAT1AHDA	AHD BATT1 (2 OF 2)	EPS	SPU A	S	Normal Thruster	amp-hours		

6	6	62	8	0	7	16	BAT1AHDB	BAT1AHDB	AHD BATT1 (1 OF 2)	EPS	SPU B	S	Normal Thruster	amp-hours		
6	6	63	8	0	7	16	BAT1AHDB	BAT1AHDB	AHD BATT1 (2 OF 2)	EPS	SPU B	S	Normal Thruster	amp-hours		
A	8	33	8	0	7	8	BAT1CUR	BAT1CUR	-X BATT 1 CURR	EPS	BATT	AH	All Power-Up	amps		
6	7	54	8	0	7	16	BAT1NDA	BAT1NDA	AHD AT NIGHT/DAY BATT1 (1 OF 2)	EPS	SPU A	S	Thruster	amp-hours		
6	7	55	8	0	7	16	BAT1NDA	BAT1NDA	AHD AT NIGHT/DAY BATT1 (2 OF 2)	EPS	SPU A	S	Thruster	amp-hours		
6	7	62	8	0	7	16	BAT1NDB	BAT1NDB	AHD AT NIGHT/DAY BATT1 (1 OF 2)	EPS	SPU B	S	Thruster	amp-hours		
6	7	63	8	0	7	16	BAT1NDB	BAT1NDB	AHD AT NIGHT/DAY BATT1 (2 OF 2)	EPS	SPU B	S	Thruster	amp-hours		
6	4	52	8	0	7	16	BAT1PREA	BAT1PREA	BATT1 PRESSURE AT NIGHT/DAY (1 OF 2)	EPS	SPU A	S	Thruster	counts		Updated leaving eclipse only
6	4	53	8	0	7	16	BAT1PREA	BAT1PREA	BATT1 PRESSURE AT NIGHT/DAY (2 OF 2)	EPS	SPU A	S	Thruster	counts		Updated leaving eclipse only
6	4	60	8	0	7	16	BAT1PREB	BAT1PREB	BATT1 PRESSURE AT NIGHT/DAY (1 OF 2)	EPS	SPU B	S	Thruster	counts		Updated leaving eclipse only
6	4	61	8	0	7	16	BAT1PREB	BAT1PREB	BATT1 PRESSURE AT NIGHT/DAY (2 OF 2)	EPS	SPU B	S	Thruster	counts		Updated leaving eclipse only
8	6	56	8	0	7	8	BAT1PRES	BAT1PRES	-X BATT 1 CELL PRESSURE	EPS	BATT	AH	All Power-Up	psia		
7	6	54	8	0	7	16	BAT1VLTA	BAT1VLTA	BATT1 VOLTAGE AT NIGHT/DAY (1 OF 2)	EPS	SPU A	S	Thruster	volts		
7	6	55	8	0	7	16	BAT1VLTA	BAT1VLTA	BATT1 VOLTAGE AT NIGHT/DAY (2 OF 2)	EPS	SPU A	S	Thruster	volts		
7	6	62	8	0	7	16	BAT1VLTB	BAT1VLTB	BATT1 VOLTAGE AT NIGHT/DAY (1 OF 2)	EPS	SPU B	S	Thruster	volts		
7	6	63	8	0	7	16	BAT1VLTB	BAT1VLTB	BATT1 VOLTAGE AT NIGHT/DAY (2 OF 2)	EPS	SPU B	S	Thruster	volts		
7	5	56	8	0	7	16	BAT1VOLT	BAT1VOLT	-X BATT 1 VOLTAGE	EPS	BATT	AH	All Power-Up	volts		
6	8	54	1	3	3	1	BAT1VTLA	BAT1VTLA	BATT 1 VT LOWER CMDS EXECUTED	TT&C	SPU A	S	Normal Thruster		0=Cmds Not Executed 1=Cmds Executed	Power Flag Word
6	8	62	1	3	3	1	BAT1VTLB	BAT1VTLB	BATT 1 VT LOWER CMDS EXECUTED	TT&C	SPU B	S	Normal Thruster		0=Cmds Not Executed 1=Cmds Executed	Power Flag Word
6	7	52	8	0	7	16	BAT2AHDA	BAT2AHDA	AHD BATT2 (1 OF 2)	EPS	SPU A	S	Normal Thruster	amp-hours		
6	7	53	8	0	7	16	BAT2AHDA	BAT2AHDA	AHD BATT2 (2 OF 2)	EPS	SPU A	S	Normal Thruster	amp-hours		
6	7	60	8	0	7	16	BAT2AHDB	BAT2AHDB	AHD BATT2 (1 OF 2)	EPS	SPU B	S	Normal Thruster	amp-hours		
6	7	61	8	0	7	16	BAT2AHDB	BAT2AHDB	AHD BATT2 (2 OF 2)	EPS	SPU B	S	Normal Thruster	amp-hours		
A	8	32	8	0	7	8	BAT2CUR	BAT2CUR	+X BATT 2 CURR	EPS	BATT	AH	All Power-Up	amps		
6	8	52	8	0	7	16	BAT2NDA	BAT2NDA	AHD AT NIGHT/DAY BATT2 (1 OF 2)	EPS	SPU A	S	Thruster	amp-hours		
6	8	53	8	0	7	16	BAT2NDA	BAT2NDA	AHD AT NIGHT/DAY BATT2 (2 OF 2)	EPS	SPU A	S	Thruster	amp-hours		
6	8	60	8	0	7	16	BAT2NDB	BAT2NDB	AHD AT NIGHT/DAY BATT2 (1 OF 2)	EPS	SPU B	S	Thruster	amp-hours		
6	8	61	8	0	7	16	BAT2NDB	BAT2NDB	AHD AT NIGHT/DAY BATT2 (2 OF 2)	EPS	SPU B	S	Thruster	amp-hours		
6	4	54	8	0	7	16	BAT2PREA	BAT2PREA	BATT2 PRESSURE AT NIGHT/DAY (1 OF 2)	EPS	SPU A	S	Thruster	counts		Updated leaving eclipse only
6	4	55	8	0	7	16	BAT2PREA	BAT2PREA	BATT2 PRESSURE AT NIGHT/DAY (2 OF 2)	EPS	SPU A	S	Thruster	counts		Updated leaving eclipse only
6	4	62	8	0	7	16	BAT2PREB	BAT2PREB	BATT2 PRESSURE AT NIGHT/DAY (1 OF 2)	EPS	SPU B	S	Thruster	counts		Updated leaving eclipse only
6	4	63	8	0	7	16	BAT2PREB	BAT2PREB	BATT2 PRESSURE AT NIGHT/DAY (2 OF 2)	EPS	SPU B	S	Thruster	counts		Updated leaving eclipse only
7	4	56	8	0	7	8	BAT2PRES	BAT2PRES	+X BATT 2 CELL PRESSURE	EPS	BATT	AH	All Power-Up	psia		
7	7	52	8	0	7	16	BAT2VLTA	BAT2VLTA	BATT2 VOLTAGE AT NIGHT/DAY (1 OF 2)	EPS	SPU A	S	Thruster	volts		
7	7	53	8	0	7	16	BAT2VLTA	BAT2VLTA	BATT2 VOLTAGE AT NIGHT/DAY (2 OF 2)	EPS	SPU A	S	Thruster	volts		

7	7	60	8	0	7	16	BAT2VLTB	BAT2VLTB	BATT2 VOLTAGE AT NIGHT/DAY (1 OF 2)	EPS	SPU B	S	Thruster	volts		
7	7	61	8	0	7	16	BAT2VLTB	BAT2VLTB	BATT2 VOLTAGE AT NIGHT/DAY (2 OF 2)	EPS	SPU B	S	Thruster	volts		
7	1	56	8	0	7	8	BAT2VOLT	BAT2VOLT	+X BATT 2 VOLTAGE	EPS	BATT	AH	All Power-Up	volts		
6	8	54	1	4	4	1	BAT2VTLA	BAT2VTLA	BATT 2 VT LOWER CMDS EXECUTED	TT&C	SPU A	S	Normal Thruster		0=Cmds Not Executed 1=Cmds Executed	Power Flag Word
6	8	62	1	4	4	1	BAT2VTLB	BAT2VTLB	BATT 2 VT LOWER CMDS EXECUTED	TT&C	SPU B	S	Normal Thruster		0=Cmds Not Executed 1=Cmds Executed	Power Flag Word
6	8	54	1	0	0	1	BC1CHGRA	BC1CHGRA	BCC 1 CHARGE RATE	TT&C	SPU A	S	Normal Thruster		0=Trickle Charge Rate 1=High Charge Rate	Power Flag Word
6	8	62	1	0	0	1	BC1CHGRB	BC1CHGRB	BCC 1 CHARGE RATE	TT&C	SPU B	S	Normal Thruster		0=Trickle Charge Rate 1=High Charge Rate	Power Flag Word
A	2	10	1	3	3	1	BC1RATE	BC1RATE	BCC 1 CHARGE RATE TRICK/HIGH	EPS	PRU	DL	All Power-Up		1=Low Rate 0=High Rate	
A	2	10	1	1	1	1	BC1VT	BC1VT	BCC 1 V/T ENABLED/DISABLED	EPS	PRU	DL	All Power-Up		1=Enabled 0=Disabled	
A	2	10	1	4	4	1	BC1VT1	BC1VT1	BCC 1 V/T BIT 1 ON/OFF	EPS	PRU	DL	All Power-Up		1=On 0=Off	
A	2	10	1	5	5	1	BC1VT2	BC1VT2	BCC 1 V/T BIT 2 ON/OFF	EPS	PRU	DL	All Power-Up		1=On 0=Off	
A	2	10	1	6	6	1	BC1VTSF	BC1VTSF	BCC 1 SHFT V/T 16/17 CELL	EPS	PRU	DL	All Power-Up		1=Normal (17-Cell) 0=Shifted (16-Cell)	
6	8	54	1	1	1	1	BC2CHGRA	BC2CHGRA	BCC 2 CHARGE RATE	TT&C	SPU A	S	Normal Thruster		0=Trickle Charge Rate 1=High Charge Rate	Power Flag Word
6	8	62	1	1	1	1	BC2CHGRB	BC2CHGRB	BCC 2 CHARGE RATE	TT&C	SPU B	S	Normal Thruster		0=Trickle Charge Rate 1=High Charge Rate	Power Flag Word
A	2	11	1	3	3	1	BC2RATE	BC2RATE	BCC 2 CHARGE RATE TRICK/HIGH	EPS	PRU	DL	All Power-Up		1=Low Rate 0=High Rate	
A	2	11	1	1	1	1	BC2VT	BC2VT	BCC 2 V/T ENABLED/DISABLED	EPS	PRU	DL	All Power-Up		1=Enabled 0=Disabled	
A	2	11	1	4	4	1	BC2VT1	BC2VT2	BCC 2 V/T BIT 1 ON/OFF	EPS	PRU	DL	All Power-Up		1=On 0=Off	
A	2	11	1	5	5	1	BC2VT2	BC2VT2	BCC 2 V/T BIT 2 ON/OFF	EPS	PRU	DL	All Power-Up		1=On 0=Off	
A	2	11	1	6	6	1	BC2VTSF	BC2VTSF	BCC 2 SHFT V/T 16/17 CELL	EPS	PRU	DL	All Power-Up		1=Normal (17-Cell) 0=Shifted (16-Cell)	
6	8	54	1	2	2	1	BCBCHGRA	BCBCHGRA	BCC B/U CHARGE RATE	TT&C	SPU A	S	Normal Thruster		0=Trickle Charge Rate 1=High Charge Rate	Power Flag Word
6	8	62	1	2	2	1	BCBCHGRB	BCBCHGRB	BCC B/U CHARGE RATE	TT&C	SPU B	S	Normal Thruster		0=Trickle Charge Rate 1=High Charge Rate	
A	2	64	1	5	5	1	BCBUBAT1	BCBUBAT1	BCC B/U CHARGE ON/BCC1 OFF	EPS	PRU	DL	All Power-Up		1=B/U BCC Off Batt 1 0=B/U BCC On Batt 1	
A	2	64	1	6	6	1	BCBUBAT2	BCBUBAT2	BCC B/U CHARGE ON/BCC2 OFF	EPS	PRU	DL	All Power-Up		1=B/U BCC Off Batt 2 0=B/U BCC On Batt 2	
A	2	64	1	1	1	1	BCBURATE	BCBURATE	BCC B/U CHARGE RATE TRICK/HIGH	EPS	PRU	DL	All Power-Up		1=Low 0=High	
A	2	64	1	0	0	1	BCBUVT	BCBUVT	BCC B/U V/T ENABLED/DISABLED	EPS	PRU	DL	All Power-Up		1=Enable 0=Disable	
A	2	64	1	2	2	1	BCBUVT1	BCBUVT1	BCC B/U V/T BIT 1 ON/OFF	EPS	PRU	DL	All Power-Up		1=On 0=Off	
A	2	64	1	3	3	1	BCBUVT2	BCBUVT2	BCC B/U V/T BIT 2 ON/OFF	EPS	PRU	DL	All Power-Up		1=On 0=Off	
A	2	64	1	4	4	1	BCBUVTSF	BCBUVTSF	BCC B/U SHFT V/T 16/17 CELL	EPS	PRU	DL	All Power-Up		1=Normal (17-Cell) 0=Shifted (16-Cell)	
A	2	10	1	2	2	1	BCC1	BCC1	BCC 1 CHARGER ON/OFF	EPS	PRU	DL	All Power-Up		1=On 0=Off	

A	2	11	1	2	2	1	BCC2	BCC2	BCC 2 CHARGER ON/OFF	EPS	PRU	DL	All Power-Up		1=On 0=Off	
6	1	24	8	0	7	8	BC+12V	BDP12V	BDD/BDX +12V ANALOG MONITOR	NDS	BDD/X	S	All Power-Up	volts		SSOH Byte 3422
6	4	24	8	0	7	8	BD+250V	BDP250V	BDD/BDX +250V ANALOG MONITOR	NDS	BDD/X	S	All Power-Up	volts		SSOH Byte 3425
2	6	24	8	0	7	8	BD+28C	BDP28C	BDD/BDX +28V CURRENT	NDS	BDD/X	S	All Power-Up	mA		SSOH Byte 3395
5	7	24	8	0	7	8	BD+5V	BDP5V	BDD/BDX +5V LOGIC VOLTAGE	NDS	BDD/X	S	All Power-Up	volts		SSOH Byte 3420
6	2	24	8	0	7	8	BD-12V	BDM12V	BDD/BDX -12V ANALOG MONITOR	NDS	BDD/X	S	All Power-Up	volts		SSOH Byte 3423
5	8	24	8	0	7	8	BD-5V	BDM5V	BDD/BDX -5V LOGIC VOLTAGE	NDS	BDD/X	S	All Power-Up	volts		SSOH Byte 3421
6	5	24	8	0	7	8	BD1T	BD1T	BDD/BDX TEMP 1	NDS	BDD/X	S	All Power-Up	Celsius		SSOH Byte 3426
6	6	24	8	0	7	8	BD2T	BD2T	BDD/BDX TEMP 2	NDS	BDD/X	S	All Power-Up	Celsius		SSOH Byte 3427
NA	NA	NA	NA	0	NA	16	BDATAEND	BDATAEND	SEC B,16 DATAENDADDR	NDS	BDP-MP	S	SSOH			87
6	3	24	8	0	7	8	BDBV	BDBV	BDD/BDX BIAS VOLTAGE	NDS	BDD/X	S	All Power-Up	volts		SSOH Byte 3424
NA	NA	NA	NA	0	NA	8	BDCMDER	BDCMDER	COMMAND ERROR COUNT	NDS	BDD/X	S	SSOH			256
NA	NA	NA	NA	1	NA	1	BDCONER	BDCONER	IP BDX/D GIM CNTRL FLG	NDS	BDP-IP	S	SSOH			145
A	1	64	1	1	1	1	BDDATA	BDDATA	BDP BDD/BDX DATA I/O	NDS	BDD/X	S	All Power-Up		0=Output 1=Input	SSOH Byte 31 L3 Format
NA	NA	NA	NA	2	NA	2	BDDINTVL	BDDINTVL	BDD COLLECT INTERVAL	NDS	BDP	S	SSOH			3001
NA	NA	NA	NA	5	NA	1	BDDLTHR	BDDLTHR	BDD LOW THRESHOLD	NDS	BDP	S	SSOH			3001
NA	NA	NA	NA	4	NA	1	BDDMOVRT	BDDMOVRT	DISABBDD MEMOVERWRIT	NDS	BDP	S	SSOH			3013
NA	NA	NA	NA	7	NA	1	BDDSUBFR	BDDSUBFR	SELECT BDD SUB FRAME	NDS	BDP	S	SSOH			3001
NA	NA	NA	NA	5	NA	1	BDEOMER	BDEOMER	BDX/D EOM ERROR FLAG	NDS	BDP-IP	S	SSOH			158
NA	NA	NA	NA	6	NA	1	BDGIMAC	BDGIMAC	GIM RESET ACKNOW-BDX/D	NDS	BDP-IP	S	SSOH			169
NA	NA	NA	NA	0	NA	1	BDGIMPAR	BDGIMPAR	BDX/D GIM PARITY	NDS	BDD/X	S	SSOH			260
NA	NA	NA	NA	1	NA	1	BDGIMPEN	BDGIMPEN	BDX/D GIM PARITY ENABLE	NDS	BDD/X	S	SSOH			260
NA	NA	NA	NA	5	NA	1	BDGIMRQ	BDGIMRQ	GIM RESET REQUEST-BDX/D	NDS	BDP-IP	S	SSOH			169
NA	NA	NA	NA	0	NA	8	BDNOERR	BDNOERR	NO OPERATION ERR CNT	NDS	BDD/X	S	SSOH			257
1	7	24	8	0	7	8	BDP+15V	BDPP15V	BDP +15V ANALOG MONITOR	NDS	BDP	S	All Power-Up	volts		SSOH Byte 3388
1	6	24	8	0	7	8	BDP+5V	BDPP5V	BDP + 5V LOGIC VOLTAGE	NDS	BDP	S	All Power-Up	volts		SSOH Byte 3387
1	1	24	8	0	7	8	BDP+5VR	BDPP5VR	BDP +5V REGULATED	NDS	BDP	S	All Power-Up	volts		SSOH Byte 3382
1	4	24	8	0	7	8	BDP-15V	BDPM15V	BDP -15V ANALOG MONITOR	NDS	BDP	S	All Power-Up	volts		SSOH Byte 3385
1	5	24	8	0	7	8	BDP-5V	BDPM5V	BDP -5V LOGIC VOLTAGE	NDS	BDP	S	All Power-Up	volts		SSOH Byte 3386
A	3	16	1	0	0	1	BDPAPWR	BDPAPWR	BDP A 28 VDC ON/OFF	NDS	BDP	S	All Power-Up		1=On 0=Off	
A	4	16	1	0	0	1	BDPBPWR	BDPBPWR	BDP B 28 VDC ON/OFF	NDS	BDP	S	All Power-Up		1=On 0=Off	
2	2	24	8	0	7	8	BDPEXSNS	BDPEXSNS	BDP EXTRA SENSOR POWER	NDS	BDP	S	All Power-Up	volts		SSOH Byte 3391
2	1	24	8	0	7	8	BDPGND	BDPGND	BDP GROUND	NDS	BDP	S	All Power-Up	volts		SSOH Byte 3390
4	7	58	8	0	7	8	BDPIFT	BDPIFT	-X BUS PNL/GBD(BDP) I/F TEMP A	MSS	TCS	AP	All Power-Up	Celsius		
1	8	24	8	0	7	8	BDPIPPV	BDPIPPV	BDP IP PROGRAMMING VOLTAGE	NDS	BDP	S	All Power-Up	volts		SSOH Byte 3389
NA	NA	NA	NA	5	NA	1	BDPL3EVT	BDPL3EVT	BDP L3 EVINITXFERFLG	NDS	BDP	S	SSOH			2972
NA	NA	NA	NA	0	NA	1	BDPL3MRO	BDPL3MRO	START L3 MRO	NDS	BDP	S	SSOH			3014
A	1	64	1	7	7	1	BDPL3XFR	BDPL3XFR	BDP TO L3 DATA XFER IN PROGRESS	NDS	BDP	S	All Power-Up		0=Off 1=On	SSOH Byte 31 L3 Format
NA	NA	NA	NA	2	NA	1	BDPLNK	BDPLNK	BDX/D LAST EV MSG XFER	NDS	BDP-IP	S	SSOH			165
2	3	24	8	0	7	8	BDPMPPV	BDPMPPV	BDP MP PROGRAMMING VOLTAGE	NDS	BDP	S	All Power-Up	volts		SSOH Byte 3392
NA	NA	NA	NA	7	NA	1	BDPOWER	BDPOWER	BDX/D POWER	NDS	BDD/X	S	SSOH			6
NA	NA	NA	NA	0	NA	1	BDPPWR	BDPPWR	BDP POWER	NDS	BDP	S	SSOH			6
NA	NA	NA	NA	7	NA	1	BDPROIN	BDPROIN	RECENT PROC INIT-BDX/D	NDS	BDP-IP	S	SSOH			169
1	3	24	8	0	7	8	BDPSA28V	BDPSA28V	BDD/BDX POWER SUPPLY A 28 VDC	NDS	BDD/X	S	All Power-Up	volts		SSOH Byte 3384
1	2	24	8	0	7	8	BDPSB28V	BDPSB28V	BDD/BDX POWER SUPPLY B 28 VDC	NDS	BDD/X	S	All Power-Up	volts		SSOH Byte 3383
2	4	24	8	0	7	8	BDPT	BDPT	BDP TEMP	NDS	BDP	S	All Power-Up	Celsius		SSOH Byte 3393
NA	NA	NA	NA	5	NA	1	BDQPLNK	BDQPLNK	BDX/D PLINK EV XFERFLG	NDS	BDP-IP	S	SSOH			166
NA	NA	NA	NA	5	NA	1	BDRECER	BDRECER	IP BDX/D GIM ERROR FLG	NDS	BDP-IP	S	SSOH			145
NA	NA	NA	NA	0	NA	8	BDSDERR	BDSDERR	SERIAL DATA ERR CNT	NDS	BDD/X	S	SSOH			255
NA	NA	NA	NA	6	NA	1	BDSELECT	BDSELECT	BDX/D POWER SELECT	NDS	BDD/X	S	SSOH			6

NA	NA	NA	NA	5	NA	1	BDSENSOR	BDSENSOR	BDX/D INDICATOR	NDS	BDD/X	S	SSOH			6
NA	NA	NA	NA	4	NA	4	BDSHRCV	BDSHRCV	BDX/D SOH RECEIVAL CNT	NDS	BDP-IP	S	SSOH			149
7	1	24	8	0	7	8	BDW+12V	BDWP+12V	BDW +12V ANALOG MONITOR	NDS	BDW	S	All Power-Up	volts		SSOH Byte 3430
6	7	24	8	0	7	8	BDW+5V	BDWP5V	BDW +5V LOGIC VOLTAGE	NDS	BDW	S	All Power-Up	volts		SSOH Byte 3428
6	8	24	8	0	7	8	BDW-5.2V	BDWM52V	BDW -5.2V ANALOG MONITOR	NDS	BDW	S	All Power-Up	volts		SSOH Byte 3429
NA	NA	NA	NA	2	NA	1	BDWADAEX	BDWADAEX	ADA EXCEPTION-BDW	NDS	BDP-IP	S	SSOH			170
A	3	16	1	4	4	1	BDWAPWR	BDWAPWR	BDW A 28 VDC ON/OFF	NDS	BDW	S	All Power-Up		1=On 0=Off	
NA	NA	NA	NA	0	NA	1	BDWARIER	BDWARIER	1705A ARITH ERR-BDW	NDS	BDP-IP	S	SSOH			170
7	4	24	8	0	7	8	BDWAUXBT	BDWAUXBT	BDW AUX BOARD TEMP	NDS	BDW	S	All Power-Up	Celsius		SSOH Byte 3433
A	4	16	1	4	4	1	BDWBPWR	BDWBPWR	BDW B 28 VDC ON/OFF	NDS	BDW	S	All Power-Up		1=On 0=Off	
7	6	24	8	0	7	8	BDWCHAST	BDWCHAST	BDW CHASSIS TEMP	NDS	BDW	S	All Power-Up	Celsius		SSOH Byte 3435
NA	NA	NA	NA	2	NA	1	BDWCONER	BDWCONER	IP BDW GIM CNTRL FLG	NDS	BDP-IP	S	SSOH			145
NA	NA	NA	NA	6	NA	1	BDWCVCFG	BDWCVCFG	BDW CONF/ELECSTAT	NDS	BDW	S	SSOH			7
A	1	64	1	2	2	1	BDWDATA	BDWDATA	BDP BDW DATA I/O	NDS	BDW	S	All Power-Up		O=Output 1=Input	SSOH Byte 31 L3 Format
NA	NA	NA	NA	5	NA	1	BDWDIAG	BDWDIAG	DIAG SUCCESSFUL-BDW	NDS	BDP-IP	S	SSOH			171
7	5	24	8	0	7	8	BDWDIGBT	BDWDIGBT	BDW DIGITAL BOARD TEMP	NDS	BDW	S	All Power-Up	Celsius		SSOH Byte 3434
NA	NA	NA	NA	6	NA	1	BDWDSTST	BDWDSTST	DISCRETE ST	NDS	BDP	S	SSOH			3055
NA	NA	NA	NA	0	NA	1	BDWDUMP	BDWDUMP	LONG MEMORY DUMP	NDS	BDP	S	SSOH			3061
NA	NA	NA	NA	4	NA	1	BDWEEXFR	BDWEEXFR	EEPROMXFERSUCCES-BDW	NDS	BDP-IP	S	SSOH			171
NA	NA	NA	NA	6	NA	1	BDWEOMER	BDWEOMER	BDW EOM ERROR FLAG	NDS	BDP-IP	S	SSOH			158
NA	NA	NA	NA	2	NA	1	BDWFUNC	BDWFUNC	DISABLE BDW FUNCTION	NDS	BDP	S	SSOH			3010
NA	NA	NA	NA	5	NA	1	BDWGIMRQ	BDWGIMRQ	GIM RESETREQUEST-BDW	NDS	BDP-IP	S	SSOH			170
NA	NA	NA	NA	3	NA	5	BDWHACER	BDWHACER	HARD ASIC CMD ERROR	NDS	BDP-IP	S	SSOH			172
NA	NA	NA	NA	1	NA	1	BDWHBCFC	BDWHBCFC	HI BAND FREQCALFAIL	NDS	BDP-IP	S	SSOH			173
NA	NA	NA	NA	3	NA	1	BDWHBDC	BDWHBDC	HI BAND DELAYCALFAIL	NDS	BDP-IP	S	SSOH			173
NA	NA	NA	NA	7	NA	1	BDWHBGC	BDWHBGC	HIGH BANDGAINCALFAIL	NDS	BDP-IP	S	SSOH			173
NA	NA	NA	NA	5	NA	1	BDWHBTC	BDWHBTC	HI BANDTHRESHCALFAIL	NDS	BDP-IP	S	SSOH			173
NA	NA	NA	NA	4	NA	1	BDWHEEPR	BDWHEEPR	HARD EEPROM FAIL-BDW	NDS	BDP-IP	S	SSOH			170
NA	NA	NA	NA	0	NA	1	BDWHFTUN	BDWHFTUN	HI F. TUNE CAL FAIL	NDS	BDP-IP	S	SSOH			172
NA	NA	NA	NA	1	NA	1	BDWHMER	BDWHMER	HARD MEMORY ERR-BDW	NDS	BDP-IP	S	SSOH			171
3	6	58	8	0	7	8	BDWIFT	BDWIFT	-X BUS PNL/GBD(BDW) I/F TEMP B	MSS	TCS	AP	All Power-Up	Celsius		
NA	NA	NA	NA	3	NA	1	BDWINIT	BDWINIT	BDW PROCESSOR INIT	NDS	BDP	S	SSOH			3009
NA	NA	NA	NA	0	NA	1	BDWLBCFC	BDWLBCFC	LO BAND FREQCALFAIL	NDS	BDP-IP	S	SSOH			173
NA	NA	NA	NA	7	NA	1	BDWLBCV	BDWLBCV	BDW LOBAND STAT	NDS	BDW	S	SSOH			7
NA	NA	NA	NA	2	NA	1	BDWLBDC	BDWLBDC	LO BAND DELAYCALFAIL	NDS	BDP-IP	S	SSOH			173
NA	NA	NA	NA	6	NA	1	BDWLBGC	BDWLBGC	LOW BAND GAINCALFAIL	NDS	BDP-IP	S	SSOH			173
NA	NA	NA	NA	4	NA	1	BDWLBTC	BDWLBTC	LO BANDTHRESHCALFAIL	NDS	BDP-IP	S	SSOH			173
NA	NA	NA	NA	6	NA	1	BDWMRO	BDWMRO	DISABLE BDW MRO MSG	NDS	BDP	S	SSOH			3064
NA	NA	NA	NA	5	NA	1	BDWPAR	BDWPAR	BDW PARITY ENABLE	NDS	BDP-IP	S	SSOH			147
NA	NA	NA	NA	1	NA	1	BDWPARER	BDWPARER	MEMORYPARITY ERR-BDW	NDS	BDP-IP	S	SSOH			170
NA	NA	NA	NA	4	NA	1	BDWPAROE	BDWPAROE	BDW ODD/EVEN PARITY	NDS	BDP-IP	S	SSOH			147
NA	NA	NA	NA	7	NA	1	BDWPROC	BDWPROC	RESET BDW PROCESSOR	NDS	BDP	S	SSOH			3066
NA	NA	NA	NA	6	NA	1	BDWPRSTR	BDWPRSTR	PROCESSORRESTART-BDW	NDS	BDP-IP	S	SSOH			171
NA	NA	NA	NA	6	NA	1	BDWRECER	BDWRECER	IP BDW GIM ERROR FLG	NDS	BDP-IP	S	SSOH			145
7	2	24	8	0	7	8	BDWRFHBT	BDWRFHBT	BDW RF HIGH BAND TEMP	NDS	BDW	S	All Power-Up	Celsius		SSOH Byte 3431
7	3	24	8	0	7	8	RDWRFLBT	BDWRFLBT	BDW RF LOW BAND TEMP	NDS	BDW	S	All Power-Up	Celsius		SSOH Byte 3432
NA	NA	NA	NA	6	NA	1	BDWRSTAC	BDWRSTAC	USART RESETACKNW-BDW	NDS	BDP-IP	S	SSOH			170
NA	NA	NA	NA	3	NA	1	BDWSACMD	BDWSACMD	SOFTASIC CMDFAIL-BDW	NDS	BDP-IP	S	SSOH			171
NA	NA	NA	NA	3	NA	1	BDWSEEPR	BDWSEEPR	SOFT EEPROM FAIL-BDW	NDS	BDP-IP	S	SSOH			170
NA	NA	NA	NA	0	NA	4	BDWSHRCV	BDWSHRCV	BDW SOH RECEIVAL CNT	NDS	BDP-IP	S	SSOH			150
NA	NA	NA	NA	5	NA	1	BDWSLCT	BDWSLCT	BDW ELEC STATUS	NDS	BDW	S	SSOH			7
NA	NA	NA	NA	2	NA	1	BDWSMER	BDWSMER	SOFT MEMORY ERR-BDW	NDS	BDP-IP	S	SSOH			171
NA	NA	NA	NA	4	NA	1	BDWSMSG	BDWSMSG	DISABLE BDW STAT MSG	NDS	BDP	S	SSOH			3064
NA	NA	NA	NA	5	NA	1	BDWSOH	BDWSOH	DISABLE BDW SOH MSG	NDS	BDP	S	SSOH			3064

NA	NA	NA	NA	6	NA	2	BDWSTAT	BDWSTAT	BDW STAT	NDS	BDW	S	SSOH			324
NA	NA	NA	NA	4	NA	2	BDWSTORE	BDWSTORE	BDPCNTRL FOR BDWWAVE	NDS	BDP	S	SSOH			3012
NA	NA	NA	NA	1	NA	1	BDWSTST	BDWSTST	ENABLE BDW SYSTEM TEST	NDS	BDP	S	SSOH			2996
NA	NA	NA	NA	5	NA	1	BDWTSTST	BDWTSTST	TIMED ST	NDS	BDP	S	SSOH			3055
NA	NA	NA	NA	7	NA	1	BDWUPLD	BDWUPLD	READY FOR UPLOAD-BDW	NDS	BDP-IP	S	SSOH			171
NA	NA	NA	NA	7	NA	1	BDWXMIT	BDWXMIT	L3 DATA XFER IF BDW	NDS	BDP	S	SSOH			2996
NA	NA	NA	NA	7	NA	1	BDWXSTST	BDWXSTST	NEXT X1 EPOCH ST	NDS	BDP	S	SSOH			3055
NA	NA	NA	NA	4	NA	1	BDXCMRST	BDXCMRST	RESET BDX/D SETCOMMANDS	NDS	BDP	S	SSOH			3003
NA	NA	NA	NA	4	NA	2	BDXCOIN	BDXCOIN	BDX CHAN COINCIDENCE	NDS	BDP	S	SSOH			3000
NA	NA	NA	NA	2	NA	2	BDXCTIME	BDXCTIME	BDX CONFIRMATIONTIME	NDS	BDP	S	SSOH			3000
NA	NA	NA	NA	3	NA	1	BDXEVT	BDXEVT	DISABBDXEVCOLLECTMSG	NDS	BDP	S	SSOH			3002
NA	NA	NA	NA	5	NA	1	BDXFLRST	BDXFLRST	RST BDX/D POINTERS&FLGS	NDS	BDP	S	SSOH			3003
NA	NA	NA	NA	1	NA	1	BDXFUNC	BDXFUNC	DISABLE BDX FUNCTION	NDS	BDP	S	SSOH			3010
NA	NA	NA	NA	6	NA	1	BDXGMECK	BDXGMECK	ENABBDX/D GIM ERCHKING	NDS	BDP	S	SSOH			3003
NA	NA	NA	NA	2	NA	1	BDXGMPAR	BDXGMPAR	BDX/D CHAN GIM PARITY	NDS	BDP	S	SSOH			3003
NA	NA	NA	NA	1	NA	1	BDXGMRST	BDXGMRST	BDX/D CHAN GIM RESET	NDS	BDP	S	SSOH			3003
8	6	58	8	0	7	8	BDXIFT	BDXIFT	EARTH PNL/GBD(BDX) I/F TEMP B	MSS	TCS	AP	All Power-Up	Celsius		
NA	NA	NA	NA	2	NA	1	BDXINIT	BDXINIT	BDX PROCESSOR INIT	NDS	BDP	S	SSOH			3009
NA	NA	NA	NA	5	NA	1	BDXMRO	BDXMRO	DISABLE BDX/D MRO	NDS	BDP	S	SSOH			3002
NA	NA	NA	NA	3	NA	1	BDXPAR	BDXPAR	BDX PARITY ENABLE	NDS	BDP-IP	S	SSOH			147
NA	NA	NA	NA	2	NA	1	BDXPAROE	BDXPAROE	BDX ODD/EVEN PARITY	NDS	BDP-IP	S	SSOH			147
NA	NA	NA	NA	7	NA	1	BDXPWR	BDXPWR	BDX POWER ON	NDS	BDP	S	SSOH			3011
NA	NA	NA	NA	6	NA	1	BDXSLCT	BDXSLCT	BDX POWER SELECT	NDS	BDP	S	SSOH			3011
NA	NA	NA	NA	6	NA	1	BDXSOH	BDXSOH	DISABLE BDX/D SOH MSGS	NDS	BDP	S	SSOH			3002
NA	NA	NA	NA	7	NA	1	BDXSOHSD	BDXSOHSD	SEND BDX/D SOH	NDS	BDP	S	SSOH			3003
NA	NA	NA	NA	7	NA	1	BDXSTAT	BDXSTAT	SEND BOX/D STATUS MSGS	NDS	BDP	S	SSOH			3002
NA	NA	NA	NA	6	NA	1	BDXSTST	BDXSTST	ENABLE BDX/D SYS TEST	NDS	BDP	S	SSOH			2984
NA	NA	NA	NA	2	NA	1	BDXTBFTO	BDXTBFTO	TMP BUF TAKOUTFLGS:BDX	NDS	BDP-MP	S	SSOH			62
NA	NA	NA	NA	0	NA	16	BDXTBIP	BDXTBIP	BDX TMP BUFF I/P PNT	NDS	BDP-MP	S	SSOH			105
NA	NA	NA	NA	0	NA	16	BDXTBOP	BDXTBOP	BDX TMP BUFF O/P PNT	NDS	BDP-MP	S	SSOH			107
NA	NA	NA	NA	0	NA	8	BDXTBQUE	BDXTBQUE	BDX TMP BUF QUEUECNT	NDS	BDP-MP	S	SSOH			66
NA	NA	NA	NA	0	NA	16	BDXTC	BDXTC	XRAY TRIG CNT(HI-LO)	NDS	BDD/X	S	SSOH			258
NA	NA	NA	NA	6	NA	1	BDXTRIG	BDXTRIG	BDX TRIGGER ENABLE	NDS	BDY	S	SSOH			219
NA	NA	NA	NA	2	NA	2	BDXWCOIN	BDXWCOIN	BDX/BDW COINCIDENCE	NDS	BDP	S	SSOH			3012
NA	NA	NA	NA	6	NA	1	BDXXMIT	BDXXMIT	L3 DATA XFER IF BDX	NDS	BDP	S	SSOH			2996
5	3	24	8	0	7	8	BDY+16C	BDYP16C	BDY +16.5V CURRENT	NDS	BDY	S	All Power-Up	mA		SSOH Byte 3416
3	1	24	8	0	7	8	BDY+16V	BDYP16V	BDY +16.5V ANALOG MONITOR	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3398
2	5	24	8	0	7	8	BDY+28C	BDYP28C	BDY +28V CURRENT	NDS	BDY	S	All Power-Up	mA		SSOH Byte 3394
3	5	24	8	0	7	8	BDY+5.25	BDYP525V	BDY +5.25V ANALOG MONITOR	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3402
5	1	24	8	0	7	8	BDY+7C	BDYP7C	BDY +7V CURRENT	NDS	BDY	S	All Power-Up	mA		SSOH Byte 3414
3	3	24	8	0	7	8	BDY+7V	BDYP7V	BDY +7V ANALOG MONITOR	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3400
5	4	24	8	0	7	8	BDY-16C	BDYM16C	BDY -16.5V CURRENT	NDS	BDY	S	All Power-Up	mA		SSOH Byte 3417
3	2	24	8	0	7	8	BDY-16V	BDYM16V	BDY -16.5V ANALOG MONITOR	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3399
3	6	24	8	0	7	8	BDY-5.25	BDYM525V	BDY -5.25 ANALOG MONITOR	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3403
5	2	24	8	0	7	8	BDY-7C	BDYM7C	BDY -7V CURRENT	NDS	BDY	S	All Power-Up	mA		SSOH Byte 3415
3	4	24	8	0	7	8	BDY-7V	BDYM7V	BDY -7V ANALOG MONITOR	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3401
NA	NA	NA	NA	0	NA	8	BDYCMDER	BDYCMDER	COMMAND ERROR COUNT	NDS	BDY	S	SSOH			252
NA	NA	NA	NA	3	NA	1	BDYCMRST	BDYCMRST	RESET BDY SET COMMANDS	NDS	BDP	S	SSOH			2972
NA	NA	NA	NA	0	NA	1	BDYCONER	BDYCONER	IP BDY GIM CNTRL FLG	NDS	BDP-IP	S	SSOH			145
A	1	64	1	0	0	1	BDYDATA	BDYDATA	BDP BDY DATA I/O	NDS	BDY	S	All Power-Up		0=Output 1=Input	SSOH Byte 31 L3 Format
NA	NA	NA	NA	1	NA	1	BDYEERF	BDYEERF	BDY EEPROM REFRESH	NDS	BDP	S	SSOH			2993
NA	NA	NA	NA	4	NA	1	BDYEOMER	BDYEOMER	BDY EOM ERROR FLAG	NDS	BDP-IP	S	SSOH			158
NA	NA	NA	NA	4	NA	1	BDYFLRST	BDYFLRST	RST BDY POINTERS & FLGS	NDS	BDP	S	SSOH			2972
NA	NA	NA	NA	0	NA	1	BDYFUNC	BDYFUNC	DISABLE BDY FUNCTION	NDS	BDP	S	SSOH			3010
NA	NA	NA	NA	6	NA	1	BDYGIMAC	BDYGIMAC	GIM RESET ACKNOW-BDY	NDS	BDP-IP	S	SSOH			168
NA	NA	NA	NA	5	NA	1	BDYGIMRQ	BDYGIMRQ	GIM REST REQ-BDY	NDS	BDP-IP	S	SSOH			168

NA	NA	NA	NA	6	NA	1	BDYGMECK	BDYGMECK	ENBLBDY GIM ERCHKING	NDS	BDP	S	SSOH			2972
NA	NA	NA	NA	2	NA	1	BDYGMPAR	BDYGMPAR	BDY CHAN GIM PARITY	NDS	BDP	S	SSOH			2972
NA	NA	NA	NA	1	NA	1	BDYGMRST	BDYGMRST	BDY CHAN GIM RESET	NDS	BDP	S	SSOH			2972
3	8	24	8	0	7	8	BDYGND	BDYGND	BDY GROUND	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3405
NA	NA	NA	NA	0	NA	1	BDYINIT	BDYINIT	BDY PROCESSOR INIT	NDS	BDP	S	SSOH			3009
NA	NA	NA	NA	1	NA	1	BDYITYPE	BDYITYPE	BDY PROCESSORINITSEL	NDS	BDP	S	SSOH			3009
NA	NA	NA	NA	4	NA	1	BDYL3TOC	BDYL3TOC	L3 TURNONCONDMET-BDY	NDS	BDP-IP	S	SSOH			168
NA	NA	NA	NA	5	NA	1	BDYMRO	BDYMRO	DISABLE BDY MRO	NDS	BDP	S	SSOH			2971
NA	NA	NA	NA	0	NA	8	BDYNOERR	BDYNOERR	NO OPERATION ERR CNT	NDS	BDY	S	SSOH			253
NA	NA	NA	NA	1	NA	1	BDYPAR	BDYPAR	BDY PARITY ENABLE	NDS	BDP-IP	S	SSOH			147
NA	NA	NA	NA	0	NA	1	BDYPAROE	BDYPAROE	BDY ODD/EVEN PARITY	NDS	BDP-IP	S	SSOH			147
NA	NA	NA	NA	2	NA	1	BDYPINL3	BDYPINL3	BDY-P INTERNAL L3FLG	NDS	BDY	S	SSOH			215
NA	NA	NA	NA	7	NA	1	BDYPROIN	BDYPROIN	RECENT PROC INIT-BDY	NDS	BDP-IP	S	SSOH			168
NA	NA	NA	NA	0	NA	1	BDYPRW	BDYPRW	BDY POWER	NDS	BDY	S	SSOH			7
2	8	24	8	0	7	8	BDYPSA28	BDYPSA28	BDY POWER SUPPLY A 28 VDC	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3397
2	7	24	8	0	7	8	BDYPSB28	BDYPSB28	BDY POWER SUPPLY B28 VDC	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3396
3	7	24	8	0	7	8	BDYPV	BDYPV	BDY PROGRAMMING VOLTAGE	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3404
NA	NA	NA	NA	2	NA	1	BDYRASWP	BDYRASWP	BDY RAM SWAP	NDS	BDP	S	SSOH			7
NA	NA	NA	NA	4	NA	1	BDYRECER	BDYRECER	IP BDY GIM ERROR FLG	NDS	BDP-IP	S	SSOH			145
NA	NA	NA	NA	1	NA	1	BDYROSWP	BDYROSWP	BDY ROM SWAP	NDS	BDY	S	SSOH			7
NA	NA	NA	NA	1	NA	1	BDYRPRGC	BDYRPRGC	REPROG COMPLETE-BDY	NDS	BDP-IP	S	SSOH			168
NA	NA	NA	NA	2	NA	1	BDYRPRGS	BDYRPRGS	REPROGRAM START-BDY	NDS	BDP-IP	S	SSOH			168
NA	NA	NA	NA	0	NA	8	BDYSDERR	BDYSDERR	SERIAL DATA ERR CNT	NDS	BDY	S	SSOH			251
NA	NA	NA	NA	0	NA	4	BDYSHRCV	BDYSHRCV	BDY SOH RECEIVAL CNT	NDS	BDP-IP	S	SSOH			149
NA	NA	NA	NA	6	NA	1	BDYSOH	BDYSOH	DISABLE BDY SOH	NDS	BDP	S	SSOH			2971
NA	NA	NA	NA	7	NA	1	BDYSOHSD	BDYSOHSD	SEND BDY SOH	NDS	BDP	S	SSOH			2972
NA	NA	NA	NA	7	NA	1	BDYSTAT	BDYSTAT	DISABLE BDY STAT MSG	NDS	BDP	S	SSOH			2971
NA	NA	NA	NA	5	NA	1	BDYSTST	BDYSTST	ENABLE BDY SYS TEST	NDS	BDP	S	SSOH			2984
4	8	24	8	0	7	8	BDYT	BDYT	BDY TEMP	NDS	BDY	S	All Power-Up	Celsius		SSOH Byte 3413
NA	NA	NA	NA	5	NA	1	BDYUPLD	BDYUPLD	UPLOAD BDY	NDS	BDP	S	SSOH			2993
NA	NA	NA	NA	5	NA	1	BDYUPLEN	BDYUPLEN	ENABLE BDY UPLOAD	NDS	BDP	S	SSOH			2992
NA	NA	NA	NA	0	NA	5	BDYYDSKP	BDYYDSKP	BDY YD SKIP COUNT	NDS	BDP-IP	S	SSOH			151
NA	NA	NA	NA	5	NA	11	BDYYFSKP	BDYYFSKP	BDY YF SKIPCNT:HIBYT	NDS	BDP-IP	S	SSOH			151
7	5	54	8	0	7	16	BETAA	BETAA	BETA ANGLE (1 OF 2)	ADS	SPU A	S	Normal	radians		
7	5	55	8	0	7	16	BETAA	BETAA	BETA ANGLE (2 OF 2)	ADS	SPU A	S	Normal	radians		
6	6	52	8	0	7	16	BETAA	BETAA	BETA ANGLE (1 OF 2)	ADS	SPU A	S	Thruster	radians		
6	6	53	8	0	7	16	BETAA	BETAA	BETA ANGLE (2 OF 2)	ADS	SPU A	S	Thruster	radians		
7	5	62	8	0	7	16	BETAB	BETAB	BETA ANGLE (1 OF 2)	ADS	SPU B	S	Normal	radians		
7	5	63	8	0	7	16	BETAB	BETAB	BETA ANGLE (2 OF 2)	ADS	SPU B	S	Normal	radians		
6	6	60	8	0	7	16	BETAB	BETAB	BETA ANGLE (1 OF 2)	ADS	SPU B	S	Thruster	radians		
6	6	61	8	0	7	16	BETAB	BETAB	BETA ANGLE (2 OF 2)	ADS	SPU B	S	Thruster	radians		
A	1	52	2	6	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (first word)
A	1	53	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (second word)
A	1	54	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (third word)
A	1	55	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (foUrth word)
A	3	52	2	6	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (first word)
A	5	52	2	6	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (first word)
A	7	52	2	6	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (first word)
A	3	53	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (second word)

A	5	53	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (second word)
A	7	53	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (second word)
A	3	54	8	0	7	26	BITCNTRA	BITCNTRA	26BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (third word)
A	5	54	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (third word)
A	7	54	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (third word)
A	3	55	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (fourth word)
A	5	55	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (fourth word)
A	7	55	8	0	7	26	BITCNTRA	BITCNTRA	26 BIT COUNTER	TT&C	SPU A	S	Early Orbit	µsec		ATTOMAN Record Word (fourth word)
A	1	60	2	6	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (first word)
A	1	61	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (second word)
A	1	62	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (third word)
A	1	63	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (fourth word)
A	3	60	2	6	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (first word)
A	5	60	2	6	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (first word)
A	7	60	2	6	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (first word)
A	3	61	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (second word)
A	5	61	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (second word)
A	7	61	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (second word)
A	3	62	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (third word)
A	5	62	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (third word)
A	7	62	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (third word)
A	3	63	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (fourth word)
A	5	63	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (fourth word)
A	7	63	8	0	7	26	BITCNTRB	BITCNTRB	26 BIT COUNTER	TT&C	SPU B	S	Early Orbit	µsec		ATTOMAN Record Word (fourth word)
A	7	11	1	0	0	1	BMEOKB1	BMEOKB1	SPU B MEOK BIT 1	TT&C	SPU	DL	All Power-Up		1=CPU A Not OK 0=CPU A OK	
A	7	11	1	1	1	1	BMEOKB2	BMEOKB2`	SPU B MEOK BIT 2	TT&C	SPU	DL	All Power-Up		1=CPU A Not OK 0=CPU A OK	
A	1	41	1	1	1	1	BMINRM	BMINRM	MDU CONV A TO BMI A (AND B TO B) NORM	TNP	MDU	DL	All Power-Up		1=Normal 0=Xstrap	
A	1	42	1	1	1	1	BMIXST	BMIXST	MDU CONV B TO BMI A (AND A TO B) XSTRAP	TNP	MDU	DL	All Power-Up		1=Xstrap 0=Normal	
8	2	56	8	0	7	8	BUSVOLT	BUSVOLT	SV BUS VOLTAGE (AT PRU)	EPS	PRU	AH	All Power-Up	volts		

8	1	58	8	0	7	8	CAFSIFT	CAFSIFT	-X PAYLOAD PNL/CAFS I/F TEMP B	MSS	TCS	AP	All Power-Up	Celsius		
NA	NA	NA	NA	7	NA	1	CALFALSM	CALFALSM	CAL FAILED REPORTS	NDS	BDP	S	SSOH			3062
NA	NA	NA	NA	5	NA	3	CARESPWR	CARESPWR	C-BAND ARIES PWR SETTIN	NDS	BDP	S	SSOH			2978
NA	NA	NA	NA	4	NA	1	CBDPDATA	CBDPDATA	DISABLE BDP DATA C-BAND	NDS	BDP	S	SSOH			2979
NA	NA	NA	NA	5	NA	1	CBDWDATA	CBDWDATA	DISABLE BDW DATA C-BAND	NDS	BDP	S	SSOH			2979
NA	NA	NA	NA	4	NA	1	CBNDARES	CBNDATES	ENABLE ARIES POWER	NDS	BDP	S	SSOH			2978
NA	NA	NA	NA	7	NA	1	CBNDHPA	CBNDHPA	HPA SELECT A/B	NDS	BDP	S	SSOH			2977
NA	NA	NA	NA	0	NA	1	CBNDNDM	CBNDNDM	ENABLE NDM POWER	NDS	BDP	S	SSOH			2978
NA	NA	NA	NA	0	NA	1	CBNDXMTR	CBNDXMTR	ENABLE C-BAND XMIT PWR	NDS	BDP	S	SSOH			2977
NA	NA	NA	NA	0	NA	16	CDATAEND	CDATAEND	SEC C,16 DATAENDADDR	NDS	BDP-MP	S	SSOH			89
1	1	56	8	0	7	8	CDUACV5V	CDUACV5V	CDU A CONV +5VDC OUT	TT&C	CDU	AH	All Power-Up	volts		
3	8	58	8	0	7	8	CDUACVT	CDUACVT	CDU A CONV TEMP	TT&C	CDU	AP	All Power-Up	Celsius		
A	7	16	1	1	1	1	CDUAPWR	CDUAPWR	CDU A CONFIGURE PWR	TT&C	CDU	S	All Power-Up		1=Enabled 0=Disabled	Loral mnemonic = "CDU-APWR"
4	2	56	8	0	7	8	CDUBCV5V	CDUBCV5V	CDU B CONV +5VDC OUT	TT&C	CDU	AH	All Power-Up	volts		
4	2	58	8	0	7	8	CDUBCVT	CDUBCVT	CDU B CONV TEMP	TT&C	CDU	AP	All Power-Up	Celsius		
A	7	16	1	5	5	1	CDUBPWR	CDUBPWR	CDU B CONFIGURE PWR	TT&C	CDU	S	All Power-Up		1=Enabled 0=Disabled	Loral mnemonic = "CDU-BPWR"
A	A	8	7	1	7	7	CDUCMDCT	CDUCMDCT	CDU COMMAND COUNT	TT&C	CDU	S	All Power-Up			Binary equivalent of decimal values 0 to 127
A	8	34	8	0	7	8	CDUCUR	CDUCUR	BUS CURR TO CDU	EPS	PRU	AH	All Power-Up	amps		
6	8	52	1	0	0	1	CDUCVA	CDUCVA	CDU COMMAND VERIFICATION	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 52 (lower half-first word)
7	4	54	1	0	0	1	CDUCVA	CDUCVA	CDU COMMAND VERIFICATION	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 54 (lower half-first word)
6	8	60	1	0	0	1	CDUCVB	CDUCVB	CDU COMMAND VERIFICATION	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 60 (lower half-first word)
7	4	62	1	0	0	1	CDUCVB	CDUCVB	CDU COMMAND VERIFICATION	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 62 (lower half-first word)
6	8	53	1	0	0	1	CDUENA	CDUENA	COMMAND DECODER UNIT	TT&C	SPU A	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 53 (lower half-second word)
7	4	55	1	0	0	1	CDUENA	CDUENA	COMMAND DECODER UNIT	TT&C	SPU A	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 55 (lower half-second word)
6	8	61	1	0	0	1	CDUENB	CDUENB	COMMAND DECODER UNIT	TT&C	SPU B	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 61 (lower half-second word)
7	4	63	1	0	0	1	CDUENB	CDUENB	COMMAND DECODER UNIT	TT&C	SPU B	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 63 (lower half-second word)
4	1	58	8	0	7	8	CDUIFT	CDUIFT	+X BUS PNL/CDU I/F TEMP B	MSS	TCS	AP	All Power-Up	Celsius		
A	A	43	1	4	4	1	CDUOVRC	CDUOVRC	CDU DPC OVERCURR FAULT	TT&C	CDU	S	All Power-Up		1=Overcurrent 0=No Overcurrent	
6	7	55	1	6	6	1	CDUPWRA	CDUPWRA	CDU POWER	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 55 (upper half-second word)
6	5	53	1	6	6	1	CDUPWRA	CDUPWRA	CDU POWER	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 53 (upper half-second word)
6	7	63	1	6	6	1	CDUPWRB	CDUPWRB	CDU POWER	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 63 (upper half-second word)
6	5	61	1	6	6	1	CDUPWRB	CDUPWRB	CDU POWER	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 61 (upper half-second word)
NA	NA	NA	NA	0	NA	1	CEVTMEM	CEVTMEM	CLEAR EVENT MEMORY	NDS	BDP	S	SSOH			2988
NA	NA	NA	NA	1	NA	7	CFGCHDRH	CFGCHDRH	DURATIONOFCONFIGCHNG-HI	NDS	BDP	S	SSOH			3004
NA	NA	NA	NA	0	NA	8	CFGCHDRL	CFGCHDRL	DURATIONOFCONFIGCHNG-LO	NDS	BDP	S	SSOH			3005
NA	NA	NA	NA	0	NA	8	CFGCHINH	CFGCHINH	TININTNXTCONFIGCHNG-MSB	NDS	BDP	S	SSOH			3037
NA	NA	NA	NA	0	NA	8	CFGCHINL	CFGCHINL	TININTNXTCONFIGCHNG-LSB	NDS	BDP	S	SSOH			3038
NA	NA	NA	NA	0	NA	8	CFGCHSTH	CFGCHSTH	ZTIME FORCONFIGCHNG-MSB	NDS	BDP	S	SSOH			3006
NA	NA	NA	NA	0	NA	8	CFGCHSTL	CFGCHSTL	ZTIME FORCONFIGCHNG-LSB	NDS	BDP	S	SSOH			3007
NA	NA	NA	NA	0	NA	1	CFIGCHG	CFIGCHG	CONFIGURATION CHANGE EN	NDS	BDP	S	SSOH			3004
NA	NA	NA	NA	1	NA	1	CFIGERR	CFIGERR	CONFIG CHANGE ERR	NDS	BDP-MP	S	SSOH			47

NA	NA	NA	NA	4	NA	1	CHANPAR	CHANPAR	BDW CHANNEL PARITY	NDS	BDP	S	SSOH			3066
A	4	15	1	7	7	1	CHKOVERA	CHKOVERA	FLAG INDIC U/L OVER MAX ALLOWED	TT&C	SPU A	S	Power-Up		1=U/L Over Range 0=U/L In Range	
A	4	23	1	7	7	1	CHKOVERB	CHKOVERB	FLAG INDIC U/L OVER MAX ALLOWED	TT&C	SPU B	S	Power-Up		1=U/L Over Range 0=U/L In Range	
A	5	12	8	0	7	16	CHKSUMA	CHKSUMA	RESULTS OF MEM CHECKSUM COMMAND	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	5	13	8	0	7	16	CHKSUMA	CHKSUMA	RESULTS OF MEM CHECKSUM COMMAND	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	5	20	8	0	7	16	CHKSUMB	CHKSUMB	RESULTS OF MEM CHECKSUM COMMAND	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	5	21	8	0	7	16	CHKSUMB	CHKSUMB	RESULTS OF MEM CHECKSUM COMMAND	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
5	8	54	8	0	7	16	CKSUMA	CKSUMA	COMMANDED CHECKSUM RESULT (1 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
5	8	55	8	0	7	16	CKSUMA	CKSUMA	COMMANDED CHECKSUM RESULT (2 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
7	8	54	8	0	7	16	CKSUMA	CKSUMA	COMMANDED CHECKSUM RESULT (1 OF 2)	TT&C	SPU A	S	Normal	counts		
7	8	55	8	0	7	16	CKSUMA	CKSUMA	COMMANDED CHECKSUM RESULT (2 OF 2)	TT&C	SPU A	S	Normal	counts		
7	4	52	8	0	7	16	CKSUMA	CKSUMA	COMMANDED CHECKSUM RESULT (1 OF 2)	TT&C	SPU A	S	Thruster	counts		
7	4	53	8	0	7	16	CKSUMA	CKSUMA	COMMANDED CHECKSUM RESULT (2 OF 2)	TT&C	SPU A	S	Thruster	counts		
5	8	62	8	0	7	16	CKSUMB	CKSUMB	COMMANDED CHECKSUM RESULT (1 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
5	8	63	8	0	7	16	CKSUMB	CKSUMB	COMMANDED CHECKSUM RESULT (2 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
7	8	62	8	0	7	16	CKSUMB	CKSUMB	COMMANDED CHECKSUM RESULT (1 OF 2)	TT&C	SPU B	S	Normal	counts		
7	8	63	8	0	7	16	CKSUMB	CKSUMB	COMMANDED CHECKSUM RESULT (2 OF 2)	TT&C	SPU B	S	Normal	counts		
7	4	60	8	0	7	16	CKSUMB	CKSUMB	COMMANDED CHECKSUM RESULT (1 OF 2)	TT&C	SPU B	S	Thruster	counts		
7	4	61	8	0	7	16	CKSUMB	CKSUMB	COMMANDED CHECKSUM RESULT (2 OF 2)	TT&C	SPU B	S	Thruster	counts		
6	8	52	6	2	7	6	CKSUMERA	CKSUMERA	CHECKSUM ERROR-4K BLOCK NUMBER	TT&C	SPU A	S	Early Orbit		Binary equivalent of values 0-32	TLM (Error) Flag Word 52 (first word) Range = 0-32
3	6	52	6	2	7	6	CKSUMERA	CKSUMERA	CHECKSUM ERROR-4K BLOCK NUMBER	TT&C	SPU A	S	Normal Thruster		Binary equivalent of values 0-32	TLM (Error) Flag Word 52 (first word) Range = 0-33
6	8	60	6	2	7	6	CKSUMERB	CKSUMERB	CHECKSUM ERROR-4K BLOCK NUMBER	TT&C	SPU B	S	Early Orbit		Binary equivalent of values 0-32	TLM (Error) Flag Word 60 (first word) Range = 0-34
3	6	60	6	2	7	6	CKSUMERB	CKSUMERB	CHECKSUM ERROR-4K BLOCK NUMBER	TT&C	SPU B	S	Normal Thruster		Binary equivalent of values 0-32	TLM (Error) Flag Word 60 (first word) Range = 0-35
A	1	12	3	4	6	3	CKSUMSTA	CKSUMSTA	UPLINK CHECKSUM STATUS	TT&C	SPU A	S	All		0=No Comp (No U/L) 1=Checksum Match 2=Checksum Error 3=Match Curr U/L 4=Err Curr U/L	TLM Flag Word 12 (first word)
A	1	20	3	4	6	3	CKSUMSTB	CKSUMSTB	UPLINK CHECKSUM STATUS	TT&C	SPU B	S	All		0=No Comp (No U/L) 1=Checksum Match 2=Checksum Error 3=Match Curr U/L 4=Err Curr U/L	TLM Flag Word 20 (first word)
A	8	13	1	7	7	1	CMDAVALA	CMDAVALA	FLAG INDICAT U/L RCVD AND AWAIT PROC	TT&C	SPU A	S	Power-Up		1=U/L Cmd Recd 0=U/L Cmd Not Recd	

A	8	21	1	7	7	1	CMDAVALB	CMDAVALB	FLAG INDICAT U/L RCVD AND AWAIT PROC	TT&C	SPU B	S	Power-Up		1=U/L Cmd Recd 0=U/L Cmd Not Recd	
NA	NA	NA	NA	6	NA	1	CMDCHECK	CMDCHECK	DISABAUTO CMD CHKING	NDS	BDP	S	SSOH			3012
A	8	41	1	5	5	1	CMDERRA	CMDERRA	PCE A CMD PARITY ERROR	TT&C	PCE	DL	All Power-Up		1=No Error 0=Error	
A	8	42	1	5	5	1	CMDERRB	CMDERRB	PCE B CMD PARITY ERROR	TT&C	PCE	DL	All Power-Up		1=No Error 0=Error	
NA	NA	NA	NA	1	NA	1	CMDINTER	CMDINTER	INT ERR FLG(CMD_RDY)	NDS	BDP-MP	S	SSOH			41
NA	NA	NA	NA	4	NA	1	CMDL3RO	CMDL3RO	L3 OP FLAG CMD	NDS	BDP-MP	S	SSOH			49
NA	NA	NA	NA	0	NA	8	CMDR00H	CMDR00H	COMMAND REGISTER 00	NDS	BDP	S	SSOH			2944
NA	NA	NA	NA	0	NA	8	CMDR1FH	CMDR1FH	COMMAND REGISTER 1F	NDS	BDP	S	SSOH			2975
NA	NA	NA	NA	0	NA	8	CMDR20H	CMDR20H	COMMAND REGISTER 20	NDS	BDP	S	SSOH			2976
NA	NA	NA	NA	0	NA	8	CMDR35H	CMDR35H	COMMAND REGISTER 35	NDS	BDP	S	SSOH			2997
NA	NA	NA	NA	0	NA	8	CMDR36H	CMDR36H	COMMAND REGISTER 36	NDS	BDP	S	SSOH			2998
NA	NA	NA	NA	0	NA	8	CMDR37H	CMDR37H	COMMAND REGISTER 37	NDS	BDP	S	SSOH			2999
NA	NA	NA	NA	0	NA	8	CMDR5FH	CMDR5FH	COMMAND REGISTER 5F	NDS	BDP	S	SSOH			3039
NA	NA	NA	NA	0	NA	8	CMDR60H	CMDR60H	COMMAND REGISTER 60	NDS	BDP	S	SSOH			3040
NA	NA	NA	NA	0	NA	8	CMDR61H	CMDR61H	COMMAND REGISTER 61	NDS	BDP	S	SSOH			3041
NA	NA	NA	NA	0	NA	8	CMDR62H	CMDR62H	COMMAND REGISTER 62	NDS	BDP	S	SSOH			3042
NA	NA	NA	NA	0	NA	8	CMDR70H	CMDR70H	COMMAND REGISTER 70	NDS	BDP	S	SSOH			3056
NA	NA	NA	NA	0	NA	8	CMDR71H	CMDR71H	COMMAND REGISTER 71	NDS	BDP	S	SSOH			3057
NA	NA	NA	NA	0	NA	8	CMDR72H	CMDR72H	COMMAND REGISTER 72	NDS	BDP	S	SSOH			3058
NA	NA	NA	NA	0	NA	8	CMDR73H	CMDR73H	COMMAND REGISTER 73	NDS	BDP	S	SSOH			3059
NA	NA	NA	NA	0	NA	8	CMDR74H	CMDR74H	COMMAND REGISTER 74	NDS	BDP	S	SSOH			3060
NA	NA	NA	NA	0	NA	8	CMDRECVD	CMDRECVD	CMD RECEIVE COUNTER	NDS	BDP-MP	S	SSOH			38
A	1	64	1	4	4	1	CMDUPMON	CMDUPMON	BDP COMMAND/UPLOAD MONITOR	NDS	BDP	S	All Power-Up		0=Even 1=Odd	SSOH Byte 31 L3 Format
NA	NA	NA	NA	1	NA	1	CMXFRMSG	CMXFRMSG	XFER MSG FLAG CMD	NDS	BDP-MP	S	SSOH			46
NA	NA	NA	NA	1	NA	3	CNDMPWR	CNDMPWR	C-BAND NDM POWER SETTIN	NDS	BDP	S	SSOH			2978
NA	NA	NA	NA	7	NA	1	CNPMDATA	CNPMDATA	DISABL NPMS DATA C-BAND	NDS	BDP	S	SSOH			2979
A	A	43	1	2	2	1	CNTRL-SA	CNTRLSA	CMD LINK CNTRL FROM SPU A	TT&C	CDU	S	All Power-Up		1=SPU A Active 0=SPU A Inactive	
A	A	43	1	3	3	1	CNTRL-SB	CNTRLSB	CMD LINK CNTRL FROM SPU B	TT&C	CDU	S	All Power-Up		1=SPU B Active 0=SPU B Inactive	
A	A	43	1	0	0	1	CNTRL-U1	CNTRLU1	CMD LINK CNTRL FROM UPLINK 1	TT&C	CDU	S	All Power-Up		1=S-Band 1 Active 0=S-Band 1 Inactive	
A	A	43	1	1	1	1	CNTRL-U2	CNTRL-U3	CMD LINK CNTRL FROM UPLINK 2	TT&C	CDU	S	All Power-Up		1=S-Band 2 Active 0=S-Band 2 Inactive	
NA	NA	NA	NA	4	NA	1	COMRELAY	COMRELAY	ENABLE COM RELAY POWER	NDS	BDP	S	SSOH			2977
NA	NA	NA	NA	3	NA	1	CONCMEM	CONCMEM	BDW WHS CONC MEM SEP	NDS	BDP	S	SSOH			3013
NA	NA	NA	NA	0	NA	1	CONCUR	CONCUR	CONCURRENCE ENABLE	NDS	BDP	S	SSOH			3051
NA	NA	NA	NA	5	NA	3	CONCWIND	CONCWIND	CH CONCURRENC WINDOW	NDS	BDP	S	SSOH			3051
NA	NA	NA	NA	3	NA	1	CONSTBB	CONSTBB	CONCSTRATBUILDBUFFOPEN	NDS	BDP-MP	S	SSOH			48
A	1	41	1	2	2	1	CPUNRM	CPUNRM	MDU CONV A TO CPU A (AND B TO B)NORM	TNP	MDU	DL	All Power-Up		1=Normal 0=Xstrap	
A	1	42	1	2	2	1	CPUXST	CPUXST	MDU CONV B TO CPU A (AND A TO B) XSTRAP	TNP	MDU	DL	All Power-Up		1=Xstrap 0=Normal	
NA	NA	NA	NA	6	NA	1	CSOHDATA	CSOHDATA	DISABLE SOH DATA C-BAND	NDS	BDP	S	SSOH			2979
1	3	57	8	0	7	8	CSS+YT	CSSPYT	CSS +Y TEMP	ADS	CSS	AP	All Power-Up	Celsius		
1	4	57	8	0	7	8	CSS-YT	CSSMYT	CSS -Y TEMP	ADS	CSS	AP	All Power-Up	Celsius		
6	7	54	1	5	5	1	CSSDRA	CSSDRA	CSS DATA READY	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 54 (upper half-first word)
6	5	52	1	5	5	1	CSSDRA	CSSDRA	CSS DATA READY	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 52 (upper half-first word)
6	7	62	1	5	5	1	CSSDRB	CSSDRB	CSS DATA READY	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 62 (upper half-first word)

6	5	60	1	5	5	1	CSSDRB	CSSDRB	CSS DATA READY	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 60 (upper half-first word)
6	8	52	1	4	4	1	CSSENA	CSSENA	COARSE SUN SENSOR	TT&C	SPU A	S	Normal		0=Disabled 1=Enabled		RDMGMT Flag Word 52 (lower half-first word)
7	4	54	1	4	4	1	CSSENA	CSSENA	COARSE SUN SENSOR	TT&C	SPU A	S	Thruster		0=Disabled 1=Enabled		RDMGMT Flag Word 54 (lower half-first word)
6	8	60	1	4	4	1	CSSENB	CSSENB	COARSE SUN SENSOR	TT&C	SPU B	S	Normal		0=Disabled 1=Enabled		RDMGMT Flag Word 60 (lower half-first word)
7	4	62	1	4	4	1	CSSENB	CSSENB	COARSE SUN SENSOR	TT&C	SPU B	S	Thruster		0=Disabled 1=Enabled		RDMGMT Flag Word 62 (lower half-first word)
4	4	52	1	3	3	1	CSSEYEA	CSSEYEA	CSS EYE SELECT	TT&C	SPU A	S	Thruster		0=Side A B	1=Side	Ground Select Flag Word 52 (first word)
5	4	54	1	3	3	1	CSSEYEA	CSSEYEA	CSS EYE SELECT	TT&C	SPU A	S	Normal		0=Side A B	1=Side	Ground Select Flag Word 54 (first word)
5	4	62	1	3	3	1	CSSEYEB	CSSEYEB	CSS EYE SELECT	TT&C	SPU B	S	Normal		0=Side A B	1=Side	Ground Select Flag Word 62 (first word)
4	4	60	1	3	3	1	CSSEYEB	CSSEYEB	CSS EYE SELECT	TT&C	SPU B	S	Thruster		0=Side A B	1=Side	Ground Select Flag Word 60 (first word)
6	7	54	1	6	6	1	CSSHSUMA	CSSHSUMA	CSS HIGH EYE SUM	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 54 (upper half-first word)
6	5	52	1	6	6	1	CSSHSUMA	CSSHSUMA	CSS HIGH EYE SUM	TT&C	SPU A	S	Thurster		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 52 (upper half-first word)
6	7	52	1	6	6	1	CSSHSUMB	CSSHSUMB	CSS HIGH EYE SUM	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 62 (upper half-first word)
6	5	60	1	6	6	1	CSSHSUMB	CSSHSUMB	CSS HIGH EYE SUM	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 60 (upper half-first word)
6	7	55	1	0	0	1	CSSLOUTA	CSSLOUTA	CSS LOW EYE OUTPUT	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 55 (upper half-second word)
6	5	53	1	0	0	1	CSSLOUTA	CSSLOUTA	CSS LOW EYE OUTPUT	TT&C	SPU A	S	Thurster		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 53 (upper half-second word)
6	7	63	1	0	0	1	CSSLOUTB	CSSLOUTB	CSS LOW EYE OUTPUT	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 63 (upper half-second word)
6	5	61	1	0	0	1	CSSLOUTB	CSSLOUTB	CSS LOW EYE OUTPUT	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 61 (upper half-second word)
6	7	54	1	7	7	1	CSSLSUMA	CSSLSUMA	CSS LOW EYE SUM	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 54 (upper half-first word)
6	5	52	1	7	7	1	CSSLSUMA	CSSLSUMA	CSS LOW EYE SUM	TT&C	SPU A	S	Thurster		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 52 (upper half-first word)
6	7	62	1	7	7	1	CSSLSUMB	CSSLSUMB	CSS LOW EYE SUM	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 62 (upper half-first word)
6	5	60	1	7	7	1	CSSLSUMB	CSSLSUMB	CSS LOW EYE SUM	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled		RDMGMT Flag Word 60 (upper half-first word)
2	6	52	8	0	7	16	CSSPFILA	CSSPFILA	FILTERED CSS PITCH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	radians			
2	6	53	8	0	7	16	CSSPFILA	CSSPFILA	FILTERED CSS PITCH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	radians			
2	6	60	8	0	7	16	CSSPFILB	CSSPFILB	FILTERED CSS PITCH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	radians			
2	6	61	8	0	7	16	CSSPFILB	CSSPFILB	FILTERED CSS PITCH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	radians			
2	8	54	4	4	7	12	CSSPITMA	CSSPITMA	CSS PITCH OUTPUT B (1 OF 2)	ADS	SPU A	S	Normal	µA			0.2959 µA/count (-Y)
2	8	55	8	0	7	12	CSSPITMA	CSSPITMA	CSS PITCH OUTPUT B (2 OF 2)	ADS	SPU A	S	Normal	µA			0.2959 µA/count (-Y)
2	4	54	4	4	7	12	CSSPITMA	CSSPITMA	CSS PITCH OUTPUT B (1 OF 2)	ADS	SPU A	S	Thruster	µA			0.2959 µA/count (-Y)
2	4	55	8	0	7	12	CSSPITMA	CSSPITMA	CSS PITCH OUTPUT B (2 OF 2)	ADS	SPU A	S	Thruster	µA			0.2959 µA/count (-Y)
2	8	62	4	4	7	12	CSSPITMB	CSSPITMB	CSS PITCH OUTPUT B (1 OF 2)	ADS	SPU B	S	Normal	µA			0.2959 µA/count (-Y)
2	8	63	8	0	7	12	CSSPITMB	CSSPITMB	CSS PITCH OUTPUT B (2 OF 2)	ADS	SPU B	S	Normal	µA			0.2959 µA/count (-Y)
2	4	62	4	4	7	12	CSSPITMB	CSSPITMB	CSS PITCH OUTPUT B (1 OF 2)	ADS	SPU B	S	Thruster	µA			0.2959 µA/count (-Y)

2	4	63	8	0	7	12	CSSPITMB	CSSPITMB	CSS PITCH OUTPUT B (2 OF 2)	ADS	SPU B	S	Thruster	µA		0.2959 µA/count (-Y)
2	4	54	4	4	7	12	CSSPITPA	CSSPITPA	CSS PITCH OUTPUT A (1 OF 2)	ADS	SPU A	S	Normal	µA		0.2959 µA/count +Y)
2	4	55	8	0	7	12	CSSPITPA	CSSPITPA	CSS PITCH OUTPUT A (2 OF 2)	ADS	SPU A	S	Normal	µA		0.2959 µA/count +Y)
2	4	52	4	4	7	12	CSSPITPA	CSSPITPA	CSS PITCH OUTPUT A (1 OF 2)	ADS	SPU A	S	Thruster	µA		0.2959 µA/count +Y)
2	4	53	8	0	7	12	CSSPITPA	CSSPITPA	CSS PITCH OUTPUT A (2 OF 2)	ADS	SPU A	S	Thruster	µA		0.2959 µA/count +Y)
2	4	62	4	4	7	12	CSSPITPB	CSSPITPB	CSS PITCH OUTPUT A (1 OF 2)	ADS	SPU B	S	Normal	µA		0.2959 µA/count +Y)
2	4	63	8	0	7	12	CSSPITPB	CSSPITPB	CSS PITCH OUTPUT A (2 OF 2)	ADS	SPU B	S	Normal	µA		0.2959 µA/count +Y)
2	4	60	4	4	7	12	CSSPITPB	CSSPITPB	CSS PITCH OUTPUT A (1 OF 2)	ADS	SPU B	S	Thruster	µA		0.2959 µA/count +Y)
2	4	61	8	0	7	12	CSSPITPB	CSSPITPB	CSS PITCH OUTPUT A (2 OF 2)	ADS	SPU B	S	Thruster	µA		0.2959 µA/count +Y)
1	6	52	8	0	7	16	CSSRFILA	CSSRFILA	FILTERED CSS ROLL OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
1	6	53	8	0	7	16	CSSRFILA	CSSRFILA	FILTERED CSS ROLL OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
1	6	60	8	0	7	16	CSSRFILB	CSSRFILB	FILTERED CSS ROLL OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
1	6	61	8	0	7	16	CSSRFILB	CSSRFILB	FILTERED CSS ROLL OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
1	8	54	4	4	7	12	CSSROLMA	CSSROLMA	CSS ROLL OUTPUT B (1 OF 2)	ADS	SPU A	S	Normal	µA		0.2959 µA/count -Y)
1	8	55	8	0	7	12	CSSROLMA	CSSROLMA	CSS ROLL OUTPUT B (2 OF 2)	ADS	SPU A	S	Normal	µA		0.2959 µA/count -Y)
1	4	54	4	4	7	12	CSSROLMA	CSSROLMA	CSS ROLL OUTPUT B (1 OF 2)	ADS	SPU A	S	Thruster	µA		0.2959 µA/count -Y)
1	4	55	8	0	7	12	CSSROLMA	CSSROLMA	CSS ROLL OUTPUT B (2 OF 2)	ADS	SPU A	S	Thruster	µA		0.2959 µA/count -Y)
1	8	62	4	4	7	12	CSSROLMB	CSSROLMB	CSS ROLL OUTPUT B (1 OF 2)	ADS	SPU B	S	Normal	µA		0.2959 µA/count -Y)
1	8	63	8	0	7	12	CSSROLMB	CSSROLMB	CSS ROLL OUTPUT B (2 OF 2)	ADS	SPU B	S	Normal	µA		0.2959 µA/count -Y)
1	4	62	4	4	7	12	CSSROLMB	CSSROLMB	CSS ROLL OUTPUT B (1 OF 2)	ADS	SPU B	S	Thruster	µA		0.2959 µA/count -Y)
1	4	63	8	0	7	12	CSSROLMB	CSSROLMB	CSS ROLL OUTPUT B (2 OF 2)	ADS	SPU B	S	Thruster	µA		0.2959 µA/count -Y)
1	4	54	4	4	7	12	CSSROLPA	CSSROLPA	CSS ROLL OUTPUT A (1 OF 2)	ADS	SPU A	S	Normal	µA		0.2959 µA/count +Y)
1	4	55	8	0	7	12	CSSROLPA	CSSROLPA	CSS ROLL OUTPUT A (2 OF 2)	ADS	SPU A	S	Normal	µA		0.2959 µA/count +Y)
1	4	52	4	4	7	12	CSSROLPA	CSSROLPA	CSS ROLL OUTPUT A (1 OF 2)	ADS	SPU A	S	Thruster	µA		0.2959 µA/count +Y)
1	4	53	8	0	7	12	CSSROLPA	CSSROLPA	CSS ROLL OUTPUT A (2 OF 2)	ADS	SPU A	S	Thruster	µA		0.2959 µA/count +Y)
1	4	62	4	4	7	12	CSSROLPB	CSSROLPB	CSS ROLL OUTPUT A (1 OF 2)	ADS	SPU B	S	Normal	µA		0.2959 µA/count +Y)
1	4	63	8	0	7	12	CSSROLPB	CSSROLPB	CSS ROLL OUTPUT A (2 OF 2)	ADS	SPU B	S	Normal	µA		0.2959 µA/count +Y)
1	4	60	4	4	7	12	CSSROLPB	CSSROLPB	CSS ROLL OUTPUT A (1 OF 2)	ADS	SPU B	S	Thruster	µA		0.2959 µA/count +Y)
1	4	61	8	0	7	12	CSSROLPB	CSSROLPB	CSS ROLL OUTPUT A (2 OF 2)	ADS	SPU B	S	Thruster	µA		0.2959 µA/count +Y)
A	5	54	8	0	7	16	CV10A	CV10A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	5	55	8	0	7	16	CV10A	CV10A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	5	62	8	0	7	16	CV10B	CV10B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	5	63	8	0	7	16	CV10B	CV10B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	6	52	8	0	7	16	CV11A	CV11A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	6	53	8	0	7	16	CV11A	CV11A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	6	60	8	0	7	16	CV11B	CV11B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	6	61	8	0	7	16	CV11B	CV11B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	6	54	8	0	7	16	CV12A	CV12A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	6	55	8	0	7	16	CV12A	CV12A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	6	62	8	0	7	16	CV12B	CV12B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	6	63	8	0	7	16	CV12B	CV12B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	7	52	8	0	7	16	CV13A	CV13A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	7	53	8	0	7	16	CV13A	CV13A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	7	60	8	0	7	16	CV13B	CV13B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	7	61	8	0	7	16	CV13B	CV13B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	7	54	8	0	7	16	CV14A	CV14A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	7	55	8	0	7	16	CV14A	CV14A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	7	62	8	0	7	16	CV14B	CV14B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	7	63	8	0	7	16	CV14B	CV14B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	8	52	8	0	7	16	CV15A	CV15A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	8	53	8	0	7	16	CV15A	CV15A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	8	60	8	0	7	16	CV15B	CV15B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	8	61	8	0	7	16	CV15B	CV15B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)

A	8	54	8	0	7	16	CV16A	CV16A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	8	55	8	0	7	16	CV16A	CV16A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	8	62	8	0	7	16	CV16B	CV16B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	8	63	8	0	7	16	CV16B	CV16B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	1	52	8	0	7	16	CV1A	CV1A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	1	53	8	0	7	16	CV1A	CV1A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	1	60	8	0	7	16	CV1B	CV1B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	1	61	8	0	7	16	CV1B	CV1B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	1	54	8	0	7	16	CV2A	CV2A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	1	55	8	0	7	16	CV2A	CV2A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	1	62	8	0	7	16	CV2B	CV2B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	1	63	8	0	7	16	CV2B	CV2B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	2	52	8	0	7	16	CV3A	CV3A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	2	53	8	0	7	16	CV3A	CV3A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	2	60	8	0	7	16	CV3B	CV3B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	2	61	8	0	7	16	CV3B	CV3B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	2	54	8	0	7	16	CV4A	CV4A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	2	55	8	0	7	16	CV4A	CV4A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	2	62	8	0	7	16	CV4B	CV4B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	2	63	8	0	7	16	CV4B	CV4B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	3	52	8	0	7	16	CV5A	CV5A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	3	53	8	0	7	16	CV5A	CV5A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	3	60	8	0	7	16	CV5B	CV5B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	3	61	8	0	7	16	CV5B	CV5B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	3	54	8	0	7	16	CV6A	CV6A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	3	55	8	0	7	16	CV6A	CV6A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	3	62	8	0	7	16	CV6B	CV6B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	3	63	8	0	7	16	CV6B	CV6B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	4	52	8	0	7	16	CV7A	CV7A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	4	53	8	0	7	16	CV7A	CV7A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	4	60	8	0	7	16	CV7B	CV7B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	4	61	8	0	7	16	CV7B	CV7B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	4	54	8	0	7	16	CV8A	CV8A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	4	55	8	0	7	16	CV8A	CV8A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	4	62	8	0	7	16	CV8B	CV8B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	4	63	8	0	7	16	CV8B	CV8B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	5	52	8	0	7	16	CV9A	CV9A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	5	53	8	0	7	16	CV9A	CV9A	CV BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	5	60	8	0	7	16	CV9B	CV9B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	5	61	8	0	7	16	CV9B	CV9B	CV BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	1	13	1	2	2	1	CVERRA	CVERRA	COMMAND VERIFICATION ERROR	TT&C	SPU A	S	All		0=No CVF Errors Rcvd 1=CVF Errors Rcvd	TLM Flag Word 13 (second word)
A	1	21	1	2	2	1	CVERRB	CVERRB	COMMAND VERIFICATION ERROR	TT&C	SPU B	S	All		0=No CVF Errors Rcvd 1=CVF Errors Rcvd	TLM Flag Word 21 (second word)
A	4	12	8	0	7	16	CVF1A	CVF1A	FIRST CVF	TT&C	SPU A	S	All			First CVF (first word)
A	4	13	8	0	7	16	CVF1A	CVF1A	FIRST CVF	TT&C	SPU A	S	All			First CVF (second word)
A	4	20	8	0	7	16	CVF1B	CVF1B	FIRST CVF	TT&C	SPU B	S	All			First CVF (first word)
A	4	21	8	0	7	16	CVF1B	CVF1B	FIRST CVF	TT&C	SPU B	S	All			First CVF (second word)
A	5	12	8	0	7	16	CVF2A	CVF2A	SECOND CVF	TT&C	SPU A	S	All			Second CVF (first word)
A	5	13	8	0	7	16	CVF2A	CVF2A	SECOND CVF	TT&C	SPU A	S	All			Second CVF (second word)
A	5	20	8	0	7	16	CVF2B	CVF2B	SECOND CVF	TT&C	SPU B	S	All			Second CVF (first word)
A	5	21	8	0	7	16	CVF2B	CVF2B	SECOND CVF	TT&C	SPU B	S	All			Second CVF (second word)
A	6	12	8	0	7	16	CVF3A	CVF3A	THIRD CVF	TT&C	SPU A	S	All			Third CVF (first word)
A	6	13	8	0	7	16	CVF3A	CVF3A	THIRD CVF	TT&C	SPU A	S	All			Third CVF (second word)
A	6	20	8	0	7	16	CVF3B	CVF3B	THIRD CVF	TT&C	SPU B	S	All			Third CVF (first word)
A	6	21	8	0	7	16	CVF3B	CVF3B	THIRD CVF	TT&C	SPU B	S	All			Third CVF (second word)
A	7	12	8	0	7	16	CVF4A	CVF4A	FOURTH CVF	TT&C	SPU A	S	All			Fourth CVF (first word)

A	7	13	8	0	7	16	CVF4A	CVF4A	FOURTH CVF	TT&C	SPU A	S	All			Fourth CVF (second word)
A	7	20	8	0	7	16	CVF4B	CVF4B	FOURTH CVF	TT&C	SPU B	S	All			Fourth CVF (first word)
A	7	21	8	0	7	16	CVF4B	CVF4B	FOURTH CVF	TT&C	SPU B	S	All			Fourth CVF (second word)
A	8	12	8	0	7	16	CVF5A	CVF5A	FIFTH CVF	TT&C	SPU A	S	All			Fifth CVF (first word)
A	8	13	8	0	7	16	CVF5A	CVF5A	FIFTH CVF	TT&C	SPU A	S	All			Fifth CVF (second word)
A	8	20	8	0	7	16	CVF5B	CVF5B	FIFTH CVF	TT&C	SPU B	S	All			Fifth CVF (first word)
A	8	21	8	0	7	16	CVF5B	CVF5B	FIFTH CVF	TT&C	SPU B	S	All			Fifth CVF (second word)
A	3	12	8	0	7	29	CVFLOWA	CVTMSTPA	CVF TIME STAMP LOWER (3 OF 4)	TT&C	SPU A	S	All			CVF Time Stamp (third word)
A	3	13	8	0	7	29	CVFLOWA	CVTMSTPA	CVF TIME STAMP LOWER (4 OF 4)	TT&C	SPU A	S	All			CVF Time Stamp (fourth word)
A	3	20	8	0	7	29	CVFLOWB	CVTMSTPB	CVF TIME STAMP LOWER (3 OF 4)	TT&C	SPU B	S	All			CVF Time Stamp (third word)
A	3	21	8	0	7	29	CVFLOWB	CVTMSTPB	CVF TIME STAMP LOWER (4 OF 4)	TT&C	SPU B	S	All			CVF Time Stamp (fourth word)
A	2	12	5	3	7	29	CVFTUPA	CVTMSTPA	CVF TIME STAMP UPPER (1 OF 4)	TT&C	SPU A	S	All			CVF Time Stamp (first word)
A	2	13	8	0	7	29	CVTUPA	CVTMSTPA	CVF TIME STAMP UPPER (2 OF 4)	TT&C	SPU A	S	All			CVF Time Stamp (second word)
A	2	20	5	3	7	29	CVFTUPB	CVTMSTPB	CVF TIME STAMP UPPER (1 OF 4)	TT&C	SPU B	S	All			CVF Time Stamp (first word)
A	2	21	8	0	7	29	CVFTUPB	CVTMSTPB	CVF TIME STAMP UPPER (2 OF 4)	TT&C	SPU B	S	All			CVF Time Stamp (second word)
A	1	13	1	1	1	1	CVFULLA	CVFULLA	COMMAND VERIFICATION FULL	TT&C	SPU A	S	All		0=CVF Buffer Not Full 1=CVF Buffer Full	TLM Flag Word 13 (second word)
A	1	21	1	1	1	1	CVFULLB	CVFULLB	COMMAND VERIFICATION FULL	TT&C	SPU B	S	All		0=CVF Buffer Not Full 1=CVF Buffer Full	TLM Flag Word 21 (second word)
A	1	13	1	3	3	1	CVWAITA	CVWAITA	CDU CMD CONTENTION	TT&C	SPU A	S	All		0=No CDU Contention 1=CDU Contention	TLM Flag Word 13 (second word)
A	1	21	1	3	3	1	CVWAITB	CVWAITB	CDU CMD CONTENTION	TT&C	SPU B	S	All		0=No CDU Contention 1=CDU Contention	TLM Flag Word 21 (second word)
NA	NA	NA	NA	1	NA	3	CXMTRPWR	CSMTRPWR	C-BAND XMIT PWR SETTING	NDS	BDP	S	SSOH			2977
A	1	16	1	2	2	1	DAMPHTRA	DAMPHTRA	DAMPER HEATER A ON/OFF	TT&C	CDU	S	All Power-Up		1=On 0=Off	
A	1	16	1	6	6	1	DAMPHTRB	DAMPHTRB	DAMPER HEATER B ON/OFF	TT&C	CDU	S	All Power-Up		1=On 0=Off	
A	3	16	1	3	3	1	DARCVR1	DARCVR1	S-BAND UPLINK 1 ACTIVE	TT&C	SBT	S	All Power-Up		1=Active 0=Inactive	
A	3	16	1	7	7	1	DARCVR2	DARCVR2	S-BAND UPLINK 2 ACTIVE	TT&C	SBT	S	All Power-Up		1=Active 0=Inactive	
8	7	58	8	0	7	8	DCDCIFT	DCDCIFT	+X PAYLOAD PNL/DC-DC CONV I/F TEMP F	MSS	TCS	AP	All Power-Up	Celsius		
NA	NA	NA	NA	5	NA	1	DCMDL3RO	DCMDL3RO	L3 OP FLAG DLYD CMD	NDS	BDP-MP	S	SSOH			49
NA	NA	NA	NA	6	NA	2	DCMDMRO	DCMDMRO	DELCMDL3MROEN&INTSEL	NDS	BDP	S	SSOH			3019
NA	NA	NA	NA	2	NA	1	DCONL3RO	DCONL3RO	L3 OP FLG DYLD CONST	NDS	BDP-MP	S	SSOH			49
NA	NA	NA	NA	2	NA	2	DCONSMRO	DCONSMRO	DELCONL3MROEN&INTSEL	NDS	BDP	S	SSOH			3019
NA	NA	NA	NA	0	NA	8	DCONSTSH	DCONSTSH	Z&CNTTIMEDELCONSTL3	NDS	BDP	S	SSOH			3022
NA	NA	NA	NA	0	NA	8	DCONSTSL	DCONSTSL	Z&CNTTIMEDELCONSTL3	NDS	BDP	S	SSOH			3023
NA	NA	NA	NA	0	NA	16	DDATAEND	DDATAEND	SEC D,16 DATAENDADDR	NDS	BDP-MP	S	SSOH			91
NA	NA	NA	NA	6	NA	1	DELCMD	DELCMD	DELAYED COMMANDED	NDS	BDP-MP	S	SSOH			48
NA	NA	NA	NA	7	NA	1	DELCNSTL	DELCNSTL	DELAYED CONSTELLATION	NDS	BDP-MP	S	SSOH			48
NA	NA	NA	NA	5	NA	1	DELSSOH	DELSSOH	DELAYED SSOH	NDS	BDP-MP	S	SSOH			48
A	7	16	1	2	2	1	DL1	DL1	S-BAND DOWNLINK 1 ON/OFF	TT&C	SBT	S	All Power-Up		1=COM 0=ATO	
A	7	16	1	6	6	1	DL2	DL2	S-BAND DOWNLINK 2 ON/OFF	TT&C	SBT	S	All Power-Up		1=COM 0=ATO	
NA	NA	NA	NA	0	NA	8	DLSSOHH	DLSSOHH	Z&CNTTIMEDELSSOHL3	NDS	BDP	S	SSOH			3024

NA	NA	NA	NA	0	NA	8	DLSSOHL	DLSSOHL	Z&CNTTIMEDELSSOHL3	NDS	BDP	S	SSOH				3025
NA	NA	NA	NA	0	NA	8	DMROH	DMROH	Z&CNTTIMEDELCMDL3MRO	NDS	BDP	S	SSOH				3026
NA	NA	NA	NA	0	NA	8	DMROL	DMROL	Z&CNTTIMEDELCMDL3MRO	NDS	BDP	S	SSOH				3027
NA	NA	NA	NA	3	NA	1	DSSHL3RO	DSSHL3RO	L3 OP FLAG DLYD SSOH	NDS	BDP-MP	S	SSOH				49
NA	NA	NA	NA	4	NA	2	DSSOHMRO	DSSOHMRO	DLSSOHL3MROEN&INTSEL	NDS	BDP	S	SSOH				3019
NA	NA	NA	NA	6	NA	1	DSTSTPAR	DSTSTPAR	BDD SYSTEM TEST	NDS	BDP	S	SSOH				3001
NA	NA	NA	NA	0	NA	2	DSYSTEST	DSYSTEST	DELSYSTSTEN&INTERSEL	NDS	BDP	S	SSOH				3019
NA	NA	NA	NA	7	NA	1	DSYSTST	DSYSTST	DELAYED SYSTEM TEST	NDS	BDP-IP	S	SSOH				146
NA	NA	NA	NA	0	NA	8	DSYSTSTH	DSYSTSTH	Z&CNTTIMEDELSYSTEST	NDS	BDP	S	SSOH				3020
NA	NA	NA	NA	0	NA	8	DSYSTSTL	DSYSTSTL	Z&CNTTIMEDELSYSTEST	NDS	BDP	S	SSOH				3021
4	4	54	2	2	3	2	DVFACEA	DVFACEA	DELTA VELOCITY THRUSTER FACE SELECT	TT&C	SPU A	S	Thruster		0=-Y 1=+X 2=-X 3=-Z face		Thruster Flag Word 54 (first word)
4	4	62	2	2	3	2	DVFACEB	DVFACEB	DELTA VELOCITY THRUSTER FACE SELECT	TT&C	SPU B	S	Thruster		0=-Y 1=+X 2=-X 3=-Z face		Thruster Flag Word 62 (first word)
4	4	54	2	4	5	2	DVTHRA	DVTHRA	DELTA VELOCITY THRUSTER SELECT	TT&C	SPU A	S	Thruster		0=Odd Half 1=Even Half 2=Both Halves		Thruster Flag Word 54 (first word)
4	4	62	2	4	5	2	DVTHRB	DVTHRB	DELTA VELOCITY THRUSTER SELECT	TT&C	SPU B	S	Thruster		0=Odd Half 1=Even Half 2=Both Halves		Thruster Flag Word 62 (first word)
A	1	10	4	4	7	12	DWELADR	DWELADR	DUMP/DWELL ADDRESS FIRST 4 BITS	TT&C	TIU	S	All Power-Up				Dwell Address (first 4 of 12 bits)
A	1	11	8	0	7	12	DWELADR	DWELADR	DUMP/DWELL ADDRESS LAST 8 BITS	TT&C	TIU	S	All Power-Up				Dwell Address (last 8 of 12 bits)
4	4	52	1	1	1	1	EAABRTA	EAABRTA	EARTH ACQUISITION ABORT INDICATOR	TT&C	SPU A	S	Thruster		0=Do Not Abort EA Mode 1=Abort EA Mode		Ground Select Flag Word 52 (first word)
5	4	54	1	1	1	1	EAABRTA	EAABRTA	EARTH ACQUISITION ABORT INDICATOR	TT&C	SPU A	S	Normal		0=Do Not Abort EA Mode 1=Abort EA Mode		Ground Select Flag Word 54 (first word)
5	4	62	1	1	1	1	EAABRTB	EAABRTB	EARTH ACQUISITION ABORT INDICATOR	TT&C	SPU B	S	Thruster		0=Do Not Abort EA Mode 1=Abort EA Mode		Ground Select Flag Word 62 (first word)
4	4	60	1	1	1	1	EAABRTB	EAABRTB	EARTH ACQUISITION ABORT INDICATOR	TT&C	SPU B	S	Thruster		0=Do Not Abort EA Mode 1=Abort EA Mode		Ground Select Flag Word 60 (first word)
8	5	58	8	0	7	8	EAPNLAT	EAPNLAT	EARTH PNL TEMP A	MSS	TCS	AP	All Power-Up	Celsius			
3	4	54	1	1	1	1	EARTHLKA	EARTHLKA	EARTH LOCK	TT&C	SPU A	S	Normal Thruster		0=No Earth Lock 1=Earth Lock		ADS Flag Word
3	4	62	1	1	1	1	EARTHLKB	EARTHLKB	EARTH LOCK	TT&C	SPU B	S	Normal Thruster		0=No Earth Lock 1=Earth Lock		ADS Flag Word
3	4	54	1	2	2	1	ECLIPSEA	ECLIPSEA	ECLIPSE INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not In Eclipse 1=In Eclipse		ADS Flag Word
3	4	62	1	2	2	1	ECLIPSEB	ECLIPSEB	ECLIPSE INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not In Eclipse 1=In Eclipse		ADS Flag Word
NA	NA	NA	NA	0	NA	16	EDATAEND	EDATAEND	SEC E,16 DATAENDADDR	NDS	BDP-MP	S	SSOH				93
NA	NA	NA	NA	7	NA	1	EEPRGERR	EEPRGERR	EE REPROG STATUS ERR	NDS	BDP-IP	S	SSOH				164
NA	NA	NA	NA	6	NA	1	EEWRTERR	EEWRTERR	EE NOTVFYLASTPGWRITE	NDS	BDP-IP	S	SSOH				164
A	6	11	1	5	5	1	ELVSEPA	ELVSEPA	ELV/SV SEPARATED A	TT&C	TIU	DL	All Power-Up		1=Not Separated 0=Separated		
A	6	10	1	5	5	1	ELVSEPB	ELVSEPB	ELV/SV SEPARATED B	TT&C	TIU	DL	All Power-Up		1=Not Separated 0=Separated		
NA	NA	NA	NA	0	NA	1	EMXFRMSG	EMXFRMSG	XFER MSG FLAG EOM	NDS	BDP-MP	S	SSOH				46
NA	NA	NA	NA	0	NA	8	EOMERROR	EOMERROR	EOM ERROR COUNTER	NDS	BDP-MP	S	SSOH				42
A	8	14	8	0	7	16	ERRBUF1A	ERRBUF1A	SECOND ELEMENT OF ERROR BUFFER	TT&C	SPU A	S	Power-Up				Word 1 of 2 (first 8 bits)
A	8	15	8	0	7	16	ERRBUF1A	ERRBUF1A	SECOND ELEMENT OF ERROR BUFFER	TT&C	SPU A	S	Power-Up				Word 2 of 2 (second 8 bits)
A	8	22	8	0	7	16	ERRBUF1B	ERRBUF1B	SECOND ELEMENT OF ERROR BUFFER	TT&C	SPU B	S	Power-Up				Word 1 of 2 (first 8 bits)

A	8	23	8	0	7	16	ERRBUF1B	ERRBUF1B	SECOND ELEMENT OF ERROR BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	7	14	8	0	7	16	ERRBUFA	ERRBUFA	FIRST ELEMENT OF ERROR BUFFER	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	7	15	8	0	7	16	ERRBUFA	ERRBUFA	FIRST ELEMENT OF ERROR BUFFER	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	7	22	8	0	7	16	ERRBUFB	ERRBUFB	FIRST ELEMENT OF ERROR BUFFER	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	7	23	8	0	7	16	ERRBUFB	ERRBUFB	FIRST ELEMENT OF ERROR BUFFER	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	2	12	8	0	7	16	ERRNUMA	ERRNUMA	NUM ERR IN ERR BUFF SINCE LAST DUMP	TT&C	SPU A	S	Power-Up	counts		Word 1 of 2 (first 8 bits)
A	2	13	8	0	7	16	ERRNUMA	ERRNUMA	NUM ERR IN ERR BUFF SINCE LAST DUMP	TT&C	SPU A	S	Power-Up	counts		Word 2 of 2 (second 8 bits)
A	2	20	8	0	7	16	ERRNUMB	ERRNUMB	NUM ERR IN ERR BUFF SINCE LAST DUMP	TT&C	SPU B	S	Power-Up	counts		Word 1 of 2 (first 8 bits)
A	2	21	8	0	7	16	ERRNUMB	ERRNUMB	NUM ERR IN ERR BUFF SINCE LAST DUMP	TT&C	SPU B	S	Power-Up	counts		Word 2 of 2 (second 8 bits)
A	4	10	1	0	0	1	ESA1HCI	ESA1HCI	ESA 1 HCI ON/OFF	ADS	ESA	DL	All Power-Up		1=Off 0=On	
A	1	40	8	0	7	8	ESA1ORSV	ESA1ORSV	ESA 1 ORS INTEGRATOR VOLTAGE	ADS	ESA	AH	All Power-Up	volts		
2	6	56	8	0	7	8	ESA1RNGT	ESA1RNGT	ESA 1 THERMAL RING TEMP	ADS	ESA	AH	All Power-Up	Celsius		
A	4	10	1	1	1	1	ESA1STAT	ESA1STAT	ESA 1 STATIC MODE ON/OFF	ADS	ESA	DL	All Power-Up		1=Off 0=On	
A	4	11	1	0	0	1	ESA2HCI	ESA2HIC	ESA 2 HCI ON/OFF	ADS	ESA	DL	All Power-Up		1=Off 0=On	
A	1	48	8	0	7	8	ESA2ORSV	ESA2ORSV	ESA 2 ORS INTEGRATOR VOLTAGE	ADS	ESA	AH	All Power-Up	volts		
5	5	56	8	0	7	8	ESA2RNGT	ESA2RNGT	ESA 2 THERMAL RING TEMP	ADS	ESA	AH	All Power-Up	Celsius		
A	4	11	1	1	1	1	ESA2STAT	ESA2STAT	ESA 2 STATIC MODE ON/OFF	ADS	ESA	DL	All Power-Up		1=Off 0=On	
4	4	52	1	2	2	1	ESABIASA	ESABIASA	ESA RADIANCE BIAS	TT&C	SPU A	S	Thruster		0=No Rad Correction 1=Rad Correction	Ground Select Flag Word 52 (first word)
5	4	54	1	2	2	1	ESABIASA	ESABIASA	ESA RADIANCE BIAS	TT&C	SPU A	S	Normal		0=No Rad Correction 1=Rad Correction	Ground Select Flag Word 54 (first word)
5	4	62	1	2	2	1	ESABIASB	ESABIASB	ESA RADIANCE BIAS	TT&C	SPU B	S	Normal		0=No Rad Correction 1=Rad Correction	Ground Select Flag Word 62 (first word)
4	4	60	1	2	2	1	ESABIASB	ESABIASB	ESA RADIANCE BIAS	TT&C	SPU B	S	Thruster		0=No Rad Correction 1=Rad Correction	Ground Select Flag Word 60 (first word)
6	7	54	1	1	1	1	ESADRA	ESADRA	ESA DATA READY	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 54 (upper half-first word)
6	5	52	1	1	1	1	ESADRA	ESADRA	ESA DATA READY	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 52 (upper half-first word)
6	7	62	1	1	1	1	ESADRB	ESADRB	ESA DATA READY	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 62 (upper half-first word)
6	5	60	1	1	1	1	ESADRB	ESADRB	ESA DATA READY	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 60 (upper half-first word)
4	5	52	5	3	7	13	ESAE1A	ESAE1A	ESA E1 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	5	53	8	0	7	13	ESAE1A	ESAE1A	ESA E1 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	5	60	5	3	7	13	ESAE1B	ESAE1B	ESA E1 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	5	61	8	0	7	13	ESAE1B	ESAE1B	ESA E1 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	7	52	5	3	7	13	ESAE2A	ESAE2A	ESA E2 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts

4	7	53	8	0	7	13	ESAE2A	ESAE2A	ESA E2 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	7	60	5	3	7	13	ESAE2B	ESAE2B	ESA E2 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	7	61	8	0	7	13	ESAE2B	ESAE2B	ESA E2 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	5	54	5	3	7	13	ESAE3A	ESAE3A	ESA E3 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	5	55	8	0	7	13	ESAE3A	ESAE3A	ESA E3 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	5	62	5	3	7	13	ESAE3B	ESAE3B	ESA E3 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	5	63	8	0	7	13	ESAE3B	ESAE3B	ESA E3 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	7	54	5	3	7	13	ESAE4A	ESAE4A	ESA E4 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	7	55	8	0	7	13	ESAE4A	ESAE4A	ESA E4 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	7	62	5	3	7	13	ESAE4B	ESAE4B	ESA E4 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	7	63	8	0	7	13	ESAE4B	ESAE4B	ESA E4 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	6	52	5	3	7	13	ESAE5A	ESAE5A	ESA E5 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	6	53	8	0	7	13	ESAE5A	ESAE5A	ESA E5 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	6	60	5	3	7	13	ESAE5B	ESAE5B	ESA E5 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	6	61	8	0	7	13	ESAE5B	ESAE5B	ESA E5 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	8	52	5	3	7	13	ESAE6A	ESAE6A	ESA E6 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	8	53	8	0	7	13	ESAE6A	ESAE6A	ESA E6 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	8	60	5	3	7	13	ESAE6B	ESAE6B	ESA E6 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	8	61	8	0	7	13	ESAE6B	ESAE6B	ESA E6 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	6	54	5	3	7	13	ESAE7A	ESAE7A	ESA E7 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	6	55	8	0	7	13	ESAE7A	ESAE7A	ESA E7 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	6	62	5	3	7	13	ESAE7B	ESAE7B	ESA E7 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	6	63	8	0	7	13	ESAE7B	ESAE7B	ESA E7 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	8	54	5	3	7	13	ESAE8A	ESAE8A	ESA E8 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	8	55	8	0	7	13	ESAE8A	ESAE8A	ESA E8 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
4	8	62	5	3	7	13	ESAE8B	ESAE8B	ESA E8 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	8	63	8	0	7	13	ESAE8B	ESAE8B	ESA E8 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
6	8	52	1	3	3	1	ESAENA	ESAENA	EARTH SENSOR ASSEMBLY	TT&C	SPU A	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag VWord 52 (lower half-first word)

7	4	54	1	3	3	1	ESAENA	ESAENA	EARTH SENSOR ASSEMBLY	TT&C	SPU A	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 54 (lower half-first word)
6	8	60	1	3	3	1	ESAENB	ESAENB	EARTH SENSOR ASSEMBLY	TT&C	SPU B	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 60 (lower half-first word)
7	4	62	1	3	3	1	ESAENB	ESAENB	EARTH SENSOR ASSEMBLY	TT&C	SPU B	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 62 (lower half-first word)
6	7	54	1	2	2	1	ESALOCKA	ESALOCKA	ESA EARTH LOCK LOST	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 54 (upper half-first word)
6	5	52	1	2	2	1	ESALOCKA	ESALOCKA	ESA EARTH LOCK LOST	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 52 (upper half-first word)
6	7	62	1	2	2	1	ESALOCKB	ESALOCKB	ESA EARTH LOCK LOST	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 62 (upper half-first word)
6	5	60	1	2	2	1	ESALOCKB	ESALOCKB	ESA EARTH LOCK LOST	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 60 (upper half-first word)
A	6	14	8	0	7	16	ESAPITA	ESAPITA	FILTERED ESA PITCH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	radians		
A	6	15	8	0	7	16	ESAPITA	ESAPITA	FILTERED ESA PITCH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	radians		
A	1	54	8	0	7	16	ESAPITA	ESAPITA	FILTERED ESA PITCH OUTPUT (1 OF 2)	ADS	SPU A	S	Thruster	radians		
A	1	55	8	0	7	16	ESAPITA	ESAPITA	FILTERED ESA PITCH OUTPUT (2 OF 2)	ADS	SPU A	S	Thruster	radians		
A	6	22	8	0	7	16	ESAPITB	ESAPITB	FILTERED ESA PITCH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	radians		
A	6	23	8	0	7	16	ESAPITB	ESAPITB	FILTERED ESA PITCH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	radians		
A	1	62	8	0	7	16	ESAPITB	ESAPITB	FILTERED ESA PITCH OUTPUT (1 OF 2)	ADS	SPU B	S	Thruster	radians		
A	1	63	8	0	7	16	ESAPITB	ESAPITB	FILTERED ESA PITCH OUTPUT (2 OF 2)	ADS	SPU B	S	Thruster	radians		
A	5	14	8	0	7	16	ESAROLA	ESAROLA	FILTERED ESA ROLL OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	radians		
A	5	15	8	0	7	16	ESAROLA	ESAROLA	FILTERED ESA ROLL OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	radians		
A	1	52	8	0	7	16	ESAROLA	ESAROLA	FILTERED ESA ROLL OUTPUT (1 OF 2)	ADS	SPU A	S	Thruster	radians		
A	1	53	8	0	7	16	ESAROLA	ESAROLA	FILTERED ESA ROLL OUTPUT (2 OF 2)	ADS	SPU A	S	Thruster	radians		
A	5	22	8	0	7	16	ESAROLB	ESAROLB	FILTERED ESA ROLL OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	radians		
A	5	23	8	0	7	16	ESAROLB	ESAROLB	FILTERED ESA ROLL OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	radians		
A	1	60	8	0	7	16	ESAROLB	ESAROLB	FILTERED ESA ROLL OUTPUT (1 OF 2)	ADS	SPU B	S	Thruster	radians		
A	1	61	8	0	7	16	ESAROLB	ESAROLB	FILTERED ESA ROLL OUTPUT (2 OF 2)	ADS	SPU B	S	Thruster	radians		
5	5	52	5	3	7	13	ESAS1A	ESAS1A	ESA S1 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	5	53	8	0	7	13	ESAS1A	ESAS1A	ESA S1 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	5	60	5	3	7	13	ESAS1B	ESAS1B	ESA S1 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	5	61	8	0	7	13	ESAS1B	ESAS1B	ESA S1 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	7	52	5	3	7	13	ESAS2A	ESAS2A	ESA S2 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts

5	7	53	8	0	7	13	ESAS2A	ESAS2A	ESA S2 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	7	60	5	3	7	13	ESAS2B	ESAS2B	ESA S2 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	7	61	8	0	7	13	ESAS2B	ESAS2B	ESA S2 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	5	54	5	3	7	13	ESAS3A	ESAS3A	ESA S3 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	5	55	8	0	7	13	ESAS3A	ESAS3A	ESA S3 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	5	62	5	3	7	13	ESAS3B	ESAS3B	ESA S3 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	5	63	8	0	7	13	ESAS3B	ESAS3B	ESA S3 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	7	54	5	3	7	13	ESAS4A	ESAS4A	ESA S4 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	7	55	8	0	7	13	ESAS4A	ESAS4A	ESA S4 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	7	62	5	3	7	13	ESAS4B	ESAS4B	ESA S4 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	7	63	8	0	7	13	ESAS4B	ESAS4B	ESA S4 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	6	52	5	3	7	13	ESAS5A	ESAS5A	ESA S5 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	6	53	8	0	7	13	ESAS5A	ESAS5A	ESA S5 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	6	60	5	3	7	13	ESAS5B	ESAS5B	ESA S5 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	6	61	8	0	7	13	ESAS5B	ESAS5B	ESA S5 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	8	52	5	3	7	13	ESAS6A	ESAS6A	ESA S6 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	8	53	8	0	7	13	ESAS6A	ESAS6A	ESA S6 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	8	60	5	3	7	13	ESAS6B	ESAS6B	ESA S6 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	8	61	8	0	7	13	ESAS6B	ESAS6B	ESA S6 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	6	54	5	3	7	13	ESAS7A	ESAS7A	ESA S7 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	6	55	8	0	7	13	ESAS7A	ESAS7A	ESA S7 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	6	62	5	3	7	13	ESAS7B	ESAS7B	ESA S7 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	6	63	8	0	7	13	ESAS7B	ESAS7B	ESA S7 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	8	54	5	3	7	13	ESAS8A	ESAS8A	ESA S8 DETECTOR OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	8	55	8	0	7	13	ESAS8A	ESAS8A	ESA S8 DETECTOR OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	volts		Segmented cal curve to volts
5	8	62	5	3	7	13	ESAS8B	ESAS8B	ESA S8 DETECTOR OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
5	8	63	8	0	7	13	ESAS8B	ESAS8B	ESA S8 DETECTOR OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	volts		Segmented cal curve to volts
4	4	54	2	6	7	2	ESASUBMA	ESASUBMA	ESA SUBMODE	TT&C	SPU A	S	Normal		0=Null No Earth 1=Acquisition Process 2=Normal Process	Mode Flag Word

3	4	52	2	6	7	2	ESASUBMA	ESASUBMA	ESA SUBMODE	TT&C	SPU A	S	Thruster		0=Null No Earth 1=Acquisition Process 2=Normal Process	Mode Flag Word
4	4	62	2	6	7	2	ESASUBMB	ESASUBMB	ESA SUBMODE	TT&C	SPU B	S	Normal		0=Null No Earth 1=Acquisition Process 2=Normal Process	Mode Flag Word
3	4	60	2	6	7	2	ESASUBMB	ESASUBMB	ESA SUBMODE	TT&C	SPU B	S	Thruster		0=Null No Earth 1=Acquisition Process 2=Normal Process	Mode Flag Word
A	6	10	1	4	4	1	EVEN2PWR	EVEN2PWR	REA EVEN 0.2 LB POWER ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	10	1	0	0	1	EVEN2X	EVEN 2X	REA EVEN 0.2 LB X ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	10	1	1	1	1	EVEN2Y	EVEN2Y	REA EVEN 0.2 LB Y ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	10	1	6	6	1	EVEN5PWR	EVEN5PWR	REA EVEN 5.0 LB POWER ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	10	1	2	2	1	EVEN5Z	EVEN5Z	REA EVEN 5.0 LB Z ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	7	12	8	0	7	16	EVENTNA	EVENTNA	NUM OF GLOBAL EVENTS DUR BOOT	TT&C	SPU A	S	Power-Up	counts		Word 1 of 2 (first 8 bits)
A	7	13	8	0	7	16	EVENTNA	EVENTNA	NUM OF GLOBAL EVENTS DUR BOOT	TT&C	SPU A	S	Power-Up	counts		Word 2 of 2 (second 8 bits)
A	7	20	8	0	7	16	EVENTNB	EVENTNB	NUM OF GLOBAL EVENTS DUR BOOT	TT&C	SPU B	S	Power-Up	counts		Word 1 of 2 (first 8 bits)
A	7	21	8	0	7	16	EVENTNB	EVENTNB	NUM OF GLOBAL EVENTS DUR BOOT	TT&C	SPU B	S	Power-Up	counts		Word 2 of 2 (second 8 bits)
NA	NA	NA	NA	0	NA	1	EVIL3RO	EVIL3RO	L3 OP FLAG EV_1	NDS	BDP-MP	S	SSOH			49
NA	NA	NA	NA	3	NA	1	EVMEMPNT	EVMEMPNT	CLEAR EVMEM&RSTPOINT	NDS	BDP	S	SSOH			3066
A	6	10	1	3	3	1	EVNCBHTR	EVNCBHTR	REA EVEN CATBED HEATER ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
NA	NA	NA	NA	1	NA	1	EVSCL3RO	EVSCL3RO	L3 OP FLAG EV_SCEM	NDS	BDP-MP	S	SSOH			49
NA	NA	NA	NA	0	NA	2	EVTSTORE	EVTSTORE	STORE ALL DATA	NDS	BDP	S	SSOH			3013
NA	NA	NA	NA	0	NA	16	FDATAEND	FDATAEND	SEC F,16 DATAENDADDR	NDS	BDP-MP	S	SSOH			95
NA	NA	NA	NA	5	NA	1	FIFORST	FIFORST	PARALLEL FIFO RESET	NDS	BDP	S	SSOH			3010
NA	NA	NA	NA	4	NA	4	FREQSET	FREQSET	QFSMODE=1, FREQ SETTING	NDS	BDP	S	SSOH			3053
4	5	27	8	0	7	8	FS1CAVO	FS1CAVO	FREQ STD1 RB CAVITY OVEN	TNP	RAFS	AH	All Power-Up	volts		
4	4	27	8	0	7	8	FS1FILTO	FS1FILTO	FREQ STD1 RB FILTER OVEN	TNP	RAFS	AH	All Power-Up	volts		
4	1	27	8	0	7	8	FS1LITE	FS1LITE	FREQ STD1 RB DC LIGHT	TNP	RAFS	AH	All Power-Up	volts		
4	3	27	8	0	7	8	FS1LMPO	FS1LMPO	FREQ STD1 RB LAMP OVEN	TNP	RAFS	AH	All Power-Up	volts		
A	7	41	1	1	1	1	FS1PWR	FS1PWR	RAFS 1 28 VDC ON/OFF	TNP	RAFS	DL	All Power-Up		1=On 0=Off	
4	2	27	8	0	7	8	FS1VCXOV	FS1VCXOV	FREQ STD1 VCXO CNTRL COLT	TNP	RAFS	AH	All Power-Up	volts		
7	4	27	8	0	7	8	FS2CAVO	FS2CAVO	FREQ STD2 RB CAVITY OVEN	TNP	RAFS	AH	All Power-Up	volts		
5	7	27	8	0	7	8	FS2FILTO	FS2FILTO	FREQ STD2 RB FILTER OVEN	TNP	RAFS	AH	All Power-Up	volts		
5	4	27	8	0	7	8	FS2LITE	FS2LITE	FREQ STD2 RB DC LIGHT	TNP	RAFS	AH	All Power-Up	volts		
5	6	27	8	0	7	8	FS2LMPO	FS2LMPO	FREQ STD2 RB LAMP OVEN	TNP	RAFS	AH	All Power-Up	volts		
A	7	42	1	1	1	1	FS2PWR	FS2PWR	RAFS 2 28 VDC ON/OFF	TNP	RAFS	DL	All Power-Up		1=On 0=Off	
5	5	27	8	0	7	8	FS2VCXOV	FS2VCXOV	FREQ STD2 VCXO CNTRL VOLT	TNP	RAFS	AH	All Power-Up	volts		
A	7	42	1	0	0	1	FS3HTR	FS3HTR	CAFS HEATER 28 VDC ON/OFF	TNP	CAFS	DL	All Power-Up		1=On 0=Off	
A	7	41	1	0	0	1	FS3PWR	FS3PWR	CAFS 28 VDC ON/OFF	TNP	CAFS	DL	All Power-Up		1=On 0=Off	
A	5	10	1	7	7	1	FSS1CEP	FSS1CEP	FSS 1 CEP STATUS	ADS	FSS	DL	All Power-Up		1=CEP 0=No CEP	Not displayed, used for SPINRT
A	4	40	8	0	7	8	FSS1COSV	FSS1COSV	FSS 1 FINE COSINE VOLTAGE	ADS	FSS	AH	All Power-Up	volts		

A	5	10	7	0	6	7	FSS1CRSE	FSS1CRSE	FSS 1 COARSE SUN ANGLE GRAY CODE	ADS	FSS	DL	All Power-Up		Gray Code equivalent value	Not displayed, used for SUNZ-lookup
A	3	16	1	6	6	1	FSS1PWR	FSS1PWR	FSS-1 28VDC ON/OFF	ADS	FSS	S	All Power-Up		1=On 0=Off	
A	2	40	8	0	7	8	FSS1REFV	FSS1REFV	FSS1 FINE REF BIAS VOLTAGE	ADS	FSS	AH	All Power-Up	volts		
A	3	40	8	0	7	8	FSS1SINV	FSS1SINV	FSS 1 FINE SINE VOLTAGE	ADS	FSS	AH	All Power-Up	volts		
A	5	11	1	7	7	1	FSS2CEP	FSS2CEP	FSS 2 CEP STATUS	ADS	FSS	DL	All Power-Up		1=CEP 0=No CEP	Not displayed, used for SPINRT
A	4	48	8	0	7	8	FSS2COSV	FSS2COSV	FSS 2 FINE COSINE VOLTAGE	ADS	FSS	AH	All Power-Up	volts		
A	5	11	7	0	6	7	FSS2CRSE	FSS2CRSE	FSS 2 COARSE SUN ANGLE GRAY CODE	ADS	FSS	DL	All Power-Up		Gray Code equivalent value	Not displayed, used for SUNZ-lookup
A	4	16	1	6	6	1	FSS2PWR	FSS2PWR	FSS-2 28 VDC ON/OFF	ADS	FSS	S	All Power-Up		1=On 0=Off	
A	2	48	8	0	7	8	FSS2REFV	FSS2REFV	FSS 2 FINE REF VOLTAGE	ADS	FSS	AH	All Power-Up	volts		
A	3	48	8	0	7	8	FSS2SINV	FSS2SINV	FSS 2 FINE SINE VOLTAGE	ADS	FSS	AH	All Power-Up	volts		
A	1	41	1	4	4	1	FSUNRM	FSUNRM	MDU CONV A TO VCXO/FSU A (AND B TO B) NORM	TNP	MDU	DL	All Power-Up		1=Normal 0=Xstrap	
A	1	42	1	4	4	1	FSUXST	FSUXST	MDU CONV B TO VCXO/FSU A (AND A TO B) XSTRAP	TNP	MDU	DL	All Power-Up		1=Normal 0=Xstrap	
NA	NA	NA	NA	3	NA	1	GBDDATA	GBDDATA	BDD DATA DISABLE	NDS	BDP	S	SSOH			2981
NA	NA	NA	NA	0	NA	1	GBDPDATA	GBDPDATA	BDP DATA DISABLE	NDS	BDP	S	SSOH			2981
NA	NA	NA	NA	4	NA	1	GBDWDATA	GBDWDATA	BDW DATA DISABLE	NDS	BDP	S	SSOH			2981
NA	NA	NA	NA	0	NA	1	GBDWPAR	GBDWPAR	BDW PARITY FLAG	NDS	BDP	S	SSOH			2980
NA	NA	NA	NA	2	NA	1	GBDXDATA	GBDXDATA	BDX DATA DISABLE	NDS	BDP	S	SSOH			2981
NA	NA	NA	NA	1	NA	1	GBDYDATA	GBDYDATA	BDY DATA DISABLE	NDS	BDP	S	SSOH			2981
NA	NA	NA	NA	0	NA	8	GD-5.25V	GDM5.25V	DIG -5.25 VDC SWITCH	NDS	GDR	S	SSOH			366
NA	NA	NA	NA	0	NA	1	GDEERFEN	GDEERFEN	EN GDR EEPROM REFRES	NDS	BDP	S	SSOH			2992
8	2	24	8	0	7	8	GDR+10V	GDRP10V	GDR DIGITAL + 10 VDC	NDS	GDR	S	All Power-Up	volts		SSOH Byte 3439
NA	NA	NA	NA	0	NA	8	GDR+28V	GDRP28V	GDR + 28 VDC	NDS	GDR	S	SSOH			365
7	8	24	8	0	7	8	GDR+5.25	GDRP525V	GDR DIGITAL + 5.25 VDC	NDS	GDR	S	All Power-Up	volts		SSOH Byte 3437
8	4	24	8	0	7	8	GDR+5V	GDRP5V	GDR RF +5 VDC	NDS	GDR	S	All Power-Up	volts		SSOH Byte 3441
8	5	24	8	0	7	8	GDR+7V	GDRP7V	GDR RF +7 VDC	NDS	GDR	S	All Power-Up	volts		SSOH Byte 3442
8	3	24	8	0	7	8	GDR-10V	GDRM10V	GDR DIGITAL -10 VDC	NDS	GDR	S	All Power-Up	volts		SSOH Byte 3440
8	1	24	8	0	7	8	GDR-5.25	GDRM525V	GDR DIGITAL -5.25 VDC	NDS	GDR	S	All Power-Up	volts		SSOH Byte 3438
8	6	24	8	0	7	8	GDR-7V	GDRM7V	GDR RF -7 VDC	NDS	GDR	S	All Power-Up	volts		SSOH Byte 3443
NA	NA	NA	NA	0	NA	8	GDRAPWR	GDRAPWR	DIG ARIES PWRSETTING	NDS	GDR	S	SSOH			372
NA	NA	NA	NA	0	NA	8	GDRASTAT	GDRASTAT	ARIES STATE 1	NDS	GDR	S	SSOH			373
NA	NA	NA	NA	2	NA	14	GDRBDYC	GDRBDYC	NPMS BDY BYTES/EPOCHCNT	NDS	GDR	S	SSOH			375
7	7	24	8	0	7	8	GDRC	GDRC	GDR CURRENT	NDS	GDR	S	All Power-Up	amps		SSOH Byte 3436
NA	NA	NA	NA	0	NA	8	GDRCMDER	GDRCMDER	COMMAND ERROR COUNT	NDS	GDR	S	SSOH			382
NA	NA	NA	NA	5	NA	1	GDRCMRST	GDRCMRST	RESET GDR SET COMMANDS	NDS	BDP	S	SSOH			2977
NA	NA	NA	NA	3	NA	1	GDRCONER	GDRCONER	IP GDR GIM CNTRL FLG	NDS	BDP-IP	S	SSOH			145
A	1	64	1	3	3	1	GDRDATA	GDRDATA	BDP GDR DATA I/O	NDS	GDR	S	All Power-Up		0=Output 1=Input	SSOH Byte 31 L3 Format
NA	NA	NA	NA	0	NA	8	GDRDATER	GDRDATER	SERIAL DATA ERR CNT	NDS	GDR	S	SSOH			381
NA	NA	NA	NA	0	NA	8	GDRDPST	GDRDPST	DIGITAL PWR SUPPLY TEMP	NDS	GDR	S	SSOH			367
NA	NA	NA	NA	0	NA	1	GDREERF	GDREERF	GDR EEPROM REFRESH	NDS	BDP	S	SSOH			2993
NA	NA	NA	NA	7	NA	1	GDREOMER	GDREOMER	GDR EOM ERROR FLAG	NDS	BDP-IP	S	SSOH			158
NA	NA	NA	NA	6	NA	1	GDRFLRST	GDRFLRST	RST GDR POINTERS & FLGS	NDS	BDP	S	SSOH			2977
NA	NA	NA	NA	6	NA	1	GDRFUNC	GDRFUNC	DISABLE GDR FUNCTIONS	NDS	BDP	S	SSOH			3010
NA	NA	NA	NA	6	NA	1	GDRGIMAC	GDRGIMAC	GIM RESET ACKNOW-GDR	NDS	BDP-IP	S	SSOH			174
NA	NA	NA	NA	5	NA	1	GDRGIMRQ	GDRGIMRQ	GIM RESET REQ-GDR	NDS	BDP-IP	S	SSOH			174
NA	NA	NA	NA	3	NA	1	GDRGMECK	GDRGMECK	ENABLE GDR GIM ERR CHK	NDS	BDP	S	SSOH			2980
NA	NA	NA	NA	2	NA	1	GDRGMPAR	GDRGMPAR	SELECT GDR CHAN PARITY	NDS	BDP	S	SSOH			2980
NA	NA	NA	NA	1	NA	1	GDRGMRST	GDRGMRST	GDR CHANNEL GIM RESET	NDS	BDP	S	SSOH			2980
NA	NA	NA	NA	4	NA	1	GDRINIT	GDRINIT	GDR PROCESSOR INIT	NDS	BDP	S	SSOH			3009
NA	NA	NA	NA	5	NA	1	GDRITYPE	GDRITYPE	GDR PROCESSORINITSEL	NDS	BDP	S	SSOH			3009

NA	NA	NA	NA	5	NA	1	GDRL4ARM	GDRL4ARM	L4 EED ARM	NDS	GDR	S	SSOH			374
NA	NA	NA	NA	7	NA	1	GDRL4DEP	GDRL4DEP	L4 DEPLOYED	NDS	GDR	S	SSOH			374
NA	NA	NA	NA	4	NA	1	GDRL4ENA	GDRL4ENA	L4 EED ENABLE	NDS	GDR	S	SSOH			374
NA	NA	NA	NA	6	NA	1	GDRL4STO	GDRL4STO	L4 STOWED	NDS	GDR	S	SSOH			374
NA	NA	NA	NA	0	NA	8	GDRMPWR	GDRMPWR	DIG NUC DETMONPWRSET	NDS	GDR	S	SSOH			371
NA	NA	NA	NA	5	NA	1	GDRMRO	GDRMRO	DISABLE GDR MRO MSGS	NDS	BDP	S	SSOH			2980
NA	NA	NA	NA	0	NA	8	GDROPNP	GDROPNP	OP NOT PERFORMED CNT	NDS	GDR	S	SSOH			383
NA	NA	NA	NA	7	NA	1	GDRPAR	GDRPAR	GDR PARITY ENABLE	NDS	BDP-IP	S	SSOH			147
NA	NA	NA	NA	6	NA	1	GDRPAROE	GDRPAROE	GDR ODD/EVEN PARITY	NDS	BDP-IP	S	SSOH			147
NA	NA	NA	NA	7	NA	1	GDRPROIN	GDRPROIN	RECENT PROC INIT-GDR	NDS	BDP-IP	S	SSOH			174
8	7	24	8	0	7	8	GDRPSA7V	GDRPSA7V	GDR POWER SUPPLY A 7 VDC	NDS	GDR	S	All Power-Up	volts		SSOH Byte 3444
8	8	24	8	0	7	8	GDRPSB7V	GDRPSB7V	GDR POWER SUPPLY B 7 VDC	NDS	GDR	S	All Power-Up	volts		SSOH Byte 3445
NA	NA	NA	NA	7	NA	1	GDRRECER	GDRRECER	IP GDR GIM ERROR FLG	NDS	BDP-IP	S	SSOH			145
NA	NA	NA	NA	0	NA	8	GDRRFPST	GDRRFPST	RF POWER SUPPLY TEMP	NDS	GDR	S	SSOH			368
NA	NA	NA	NA	4	NA	4	GDRSHRCV	GDRSHRCV	GDR SOH RECEIVAL CNT	NDS	BDP-IP	S	SSOH			150
NA	NA	NA	NA	4	NA	1	GDRSLCT	GDRSLCT	GDR SELECTION	NDS	BDP	S	SSOH			2988
NA	NA	NA	NA	6	NA	1	GDRSOH	GDRSOH	DISABLE GDR SOH MSGS	NDS	BDP	S	SSOH			2980
NA	NA	NA	NA	4	NA	1	GDRSOHSD	GDRSOHSD	SEND GDR SOH	NDS	BDP	S	SSOH			2980
NA	NA	NA	NA	7	NA	1	GDRSTAT	GDRSTAT	DISABLE GDR STAT MSG	NDS	BDP	S	SSOH			2980
NA	NA	NA	NA	0	NA	8	GDRSTAT1	GDRSTAT1	DIGITAL STATE 1	NDS	GDR	S	SSOH			377
NA	NA	NA	NA	0	NA	8	GDRSTAT2	GDRSTAT2	DIGITAL STATE 2	NDS	GDR	S	SSOH			378
NA	NA	NA	NA	0	NA	8	GDRSTAT3	GDRSTAT3	DIGITAL STATE 3	NDS	GDR	S	SSOH			379
NA	NA	NA	NA	0	NA	8	GDRSTAT4	GDRSTAT4	DIGITAL STATE 4	NDS	GDR	S	SSOH			380
NA	NA	NA	NA	7	NA	1	GDRSTST	GDRSTST	ENABLE GDR SYSTEM TEST	NDS	BDP	S	SSOH			2984
NA	NA	NA	NA	1	NA	1	GDRSYLK1	GDRSYLK1	SYNTH LOCK 1	NDS	GDR	S	SSOH			374
NA	NA	NA	NA	2	NA	1	GDRSYLK2	GDRSYLK2	SYNTH LOCK 2	NDS	GDR	S	SSOH			374
NA	NA	NA	NA	3	NA	1	GDRSYLK3	GDRSYLK3	SYNTH LOCK 3	NDS	GDR	S	SSOH			374
NA	NA	NA	NA	0	NA	8	GDRT	GDRT	BOX TEMPERATURE	NDS	GDR	S	SSOH			369
NA	NA	NA	NA	0	NA	8	GDRTPWR	GDRTPWR	DIG C-BANDXMITPWRSET	NDS	GDR	S	SSOH			370
NA	NA	NA	NA	4	NA	1	GDRUPLD	GDRUPLD	UPLOAD BDR	NDS	BDP	S	SSOH			2993
NA	NA	NA	NA	4	NA	1	GDRUPLEN	GDRUPLEN	ENABLE GDR UPLOAD	NDS	BDP	S	SSOH			2992
2	8	58	8	0	7	8	GED+X1T	GEDPX1T	+X+Y GED TEMP A	TT&C	GED	AP	All Power-Up	Celsius		
2	2	58	8	0	7	8	GED+X2T	GEDPX2T	+X+Y GED TEMP B	TT&C	GED	AP	All Power-Up	Celsius		
2	3	58	8	0	7	8	GED-X1T	GEDMX1T	-X+Y GED TEMP A	TT&C	GED	AP	All Power-Up	Celsius		
2	4	58	8	0	7	8	GED-X2T	GEDMX2T	-X+Y GED TEMP B	TT&C	GED	AP	All Power-Up	Celsius		
A	7	14	8	0	7	16	GEDCNTA	GEDCNTA	GLOBAL EVENT COUNTER (1 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
A	7	15	8	0	7	16	GEDCNTA	GEDCNTA	GLOBAL EVENT COUNTER (2 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
3	8	54	8	0	7	16	GEDCNTA	GEDCNTA	GLOBAL EVENT COUNTER (1 OF 2)	TT&C	SPU A	S	Normal	counts		
3	8	55	8	0	7	16	GEDCNTA	GEDCNTA	GLOBAL EVENT COUNTER (2 OF 2)	TT&C	SPU A	S	Normal	counts		
5	4	54	8	0	7	16	GEDCNTA	GEDCNTA	GLOBAL EVENT COUNTER (1 OF 2)	TT&C	SPU A	S	Thruster	counts		
5	4	55	8	0	7	16	GEDCNTA	GEDCNTA	GLOBAL EVENT COUNTER (2 OF 2)	TT&C	SPU A	S	Thruster	counts		
A	7	22	8	0	7	16	GEDCNTB	GEDCNTB	GLOBAL EVENT COUNTER (1 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
A	7	23	8	0	7	16	GEDCNTB	GEDCNTB	GLOBAL EVENT COUNTER (2 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
3	8	62	8	0	7	16	GEDCNTB	GEDCNTB	GLOBAL EVENT COUNTER (1 OF 2)	TT&C	SPU B	S	Normal	counts		
3	8	63	8	0	7	16	GEDCNTB	GEDCNTB	GLOBAL EVENT COUNTER (2 OF 2)	TT&C	SPU B	S	Normal	counts		
5	4	62	8	0	7	8	GEDCNTB	GEDCNTB	GLOBAL EVENT COUNTER (1 OF 2)	TT&C	SPU B	S	Thruster	counts		
5	4	63	8	0	7	8	GEDCNTB	GEDCNTB	GLOBAL EVENT COUNTER (2 OF 2)	TT&C	SPU B	S	Thruster	counts		
NA	NA	NA	NA	0	NA	1	GIMPAR	GIMPAR	GIM PARITY	NDS	BDY	S	SSOH			211
NA	NA	NA	NA	1	NA	1	GIMPAREN	GIMPAREN	GIM PARITY ENABLE	NDS	BDY	S	SSOH			211
A	5	14	8	0	7	16	GNDCMCTA	GNDCMCTA	GROUND CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
A	5	15	8	0	7	16	GNDCMCTA	GNDCMCTA	GROUND CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
8	8	52	8	0	7	16	GNDCMCTA	GNDCMCTA	GROUND CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU A	S	Normal	counts		
8	8	53	8	0	7	16	GNDCMCTA	GNDCMCTA	GROUND CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU A	S	Normal	counts		

7	8	52	8	0	7	16	GNDCMCTA	GNDCMCTA	GROUND CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU A	S	Thruster	counts		
7	8	53	8	0	7	16	GNDCMCTA	GNDCMCTA	GROUND CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU A	S	Thruster	counts		
A	5	22	8	0	7	16	GNDCMCTB	GNDCMCTB	GROUND CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
A	5	23	8	0	7	16	GNDCMCTB	GNDCMCTB	GROUND CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
8	8	60	8	0	7	16	GNDCMCTB	GNDCMCTB	GROUND CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU B	S	Normal	counts		
8	8	61	8	0	7	16	GNDCMCTB	GNDCMCTB	GROUND CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU B	S	Normal	counts		
7	8	60	8	0	7	16	GNDCMCTB	GNDCMCTB	GROUND CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU B	S	Thruster	counts		
7	8	61	8	0	7	16	GNDCMCTB	GNDCMCTB	GROUND CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU B	S	Thruster	counts		
4	4	55	3	0	2	3	GNDMODEA	GNDMODEA	GROUND COMMANDED ADS MODE	TT&C	SPU A	S	Normal		0=Off 1=RN 2=SOH 3=SHES 4=EAH 5=SK 6=SNP 7=EHYS	Mode Flag Word
3	4	53	3	0	2	3	GNDMODEA	GNDMODEA	GROUND COMMANDED ADS MODE	TT&C	SPU A	S	Thruster		0=Off 1=RN 2=SOH 3=SHES 4=EAH 5=SK 6=SNP 7=EHYS	Mode Flag Word
4	4	63	3	0	2	3	GNDMODEB	GNDMODEB	GROUND COMMANDED ADS MODE	TT&C	SPU B	S	Normal		0=Off 1=RN 2=SOH 3=SHES 4=EAH 5=SK 6=SNP 7=EHYS	Mode Flag Word
3	4	61	3	0	2	3	GNDMODEB	GNDMODEB	GROUND COMMANDED ADS MODE	TT&C	SPU B	S	Thruster		0=Off 1=RN 2=SOH 3=SHES 4=EAH 5=SK 6=SNP 7=EHYS	Mode Flag Word
A	1	15	1	7	7	1	GRDCONTA	GRDCONTA	FLAG INDIC AT LEAST ONE GND CMD RCVD	TT&C	SPU A	S	Power-Up		O=No Cmds Rcvd (No U/L) 1=At Least One Cmd Rcvd (Have U/L)	Ground Contract Flag Word 15 (second word)
A	1	23	1	7	7	1	GRDCONTB	GRDCONTB	FLAG INDIC AT LEAST ONE GND CMD RCVD	TT&C	SPU B	S	Power-Up		O=No Cmds Rcvd (No U/L) 1=At Least One Cmd Rcvd (Have U/L)	Ground Contract Flag Word 23 (second word)
NA	NA	NA	NA	0	NA	8	GRPXFER	GRPXFER	GROUP TRANSFER FLAG	NDS	BDP-IP	S	SSOH			161
NA	NA	NA	NA	3	NA	1	GSTST1EX	GSTST1EX	GDR SYSTEM TEST EXECUTE	NDS	BDP	S	SSOH			2984
NA	NA	NA	NA	0	NA	1	GSTST2EX	GSTST2EX	GDR DISCRETE SYS TEST	NDS	BDP	S	SSOH			2985
NA	NA	NA	NA	0	NA	1	HBABUFF	HBABUFF	TURNOFFHIBAND A BUFF	NDS	BDP	S	SSOH			3064
NA	NA	NA	NA	1	NA	1	HBBBFDAT	HBBBFDAT	DONTSNDHIBAND B DATA	NDS	BDP	S	SSOH			3064
NA	NA	NA	NA	1	NA	1	HBCONCUR	HBCONCUR	THREE CH CONCURRENCE	NDS	BDP	S	SSOH			3051
NA	NA	NA	NA	0	NA	2	HBFARCH	HBFARCH	HI BAND CHANNEL SEL	NDS	BDP	S	SSOH			3047
NA	NA	NA	NA	2	NA	6	HBFARTH	HBFARTH	HIBANDFALSEALARMRATE	NDS	BDP	S	SSOH			3047
NA	NA	NA	NA	0	NA	4	HBFREQDL	HBFREQDL	HIBANDFREQSTEPAUXDEL COR	NDS	BDW	S	SSOH			345
NA	NA	NA	NA	4	NA	4	HBFREQST	HBFREQST	HIGH BAND FREQ STEP	NDS	BDW	S	SSOH			345
NA	NA	NA	NA	0	NA	16	HBHCACMD	HBHCACMD	LACC - HIGH BAND CH1	NDS	BDW	S	SSOH			325
NA	NA	NA	NA	0	NA	16	HBHCADC	HBHCADC	HIBANDCH1AUXDELCORR CTI	NDS	BDW	S	SSOH			359
NA	NA	NA	NA	0	NA	24	HBHCCF	HBHCCF	CENTERFREQ-HIBANDCH2	NDS	BDW	S	SSOH			291
NA	NA	NA	NA	0	NA	16	HBHCDC	HBHCDC	DELAY CORRECT-HIBANDCH1	NDS	BDW	S	SSOH			306
NA	NA	NA	NA	0	NA	16	HBHCFTC	HBHCFTC	FTCV HIBAND CH1:HILO	NDS	BDW	S	SSOH			268
NA	NA	NA	NA	0	NA	8	HBHCGAIN	HBHCGAIN	GAIN SET HIBAND CH1	NDS	BDW	S	SSOH			278
NA	NA	NA	NA	0	NA	16	HBHCGCAL	HBHCGCAL	A/D VALUE-HIBAND CH1	NDS	BDW	S	SSOH			283

NA	NA	NA	NA	0	NA	16	HBHCMAD	HBHCMAD	MID A/D VAL-HIBNDCH1	NDS	BDW	S	SSOH				316
NA	NA	NA	NA	5	NA	3	HBHCNM	HBHCNM	BDW HIGH BAND CH1	NDS	BDD/X	S	SSOH				265
NA	NA	NA	NA	0	NA	16	HBHCRCMD	HBHCRCMD	LRCC - HIGH BAND CH1	NDS	BDW	S	SSOH				335
NA	NA	NA	NA	0	NA	8	HBHCTH	HBHCTH	HIGH BAND CH 1 THRESSET	NDS	BDW	S	SSOH				346
NA	NA	NA	NA	0	NA	8	HBHCTHOF	HBHCTHOF	HIGH BAND CH 1 THRESSET	NDS	BDW	S	SSOH				351
NA	NA	NA	NA	5	NA	1	HBHCTRIG	HBHCTRIG	EN HIGH BAND CHAN 1	NDS	BDP	S	SSOH				3065
NA	NA	NA	NA	0	NA	16	HBLCACMD	HBLCACMD	LACC - HIGH BAND CH3	NDS	BDW	S	SSOH				329
NA	NA	NA	NA	0	NA	16	HBLCADC	HBLCADC	HIBANDCH3AUXDELCORRE CTI	NDS	BDW	S	SSOH				363
NA	NA	NA	NA	0	NA	24	HBLCCF	HBLCCF	CENTERFREQ-HIBANDCH3	NDS	BDW	S	SSOH				297
NA	NA	NA	NA	0	NA	16	HBLCDC	HBLCDC	DELAY CORRECT- HIBANDCH3	NDS	BDW	S	SSOH				310
NA	NA	NA	NA	0	NA	16	HBLCFTC	HBLCFTC	FTCV HIBAND CH3:HILO	NDS	BDW	S	SSOH				272
NA	NA	NA	NA	0	NA	8	HBLCGAIN	HBLCGAIN	GAIN SET HIBAND CH3	NDS	BDW	S	SSOH				280
NA	NA	NA	NA	0	NA	16	HBLCGCAL	HBLCGCAL	A/D VALUE-HIBAND CH3	NDS	BDW	S	SSOH				287
NA	NA	NA	NA	0	NA	16	HBLCMAD	HBLCMAD	MID A/D VAL-HIBNDCH3	NDS	BDW	S	SSOH				320
NA	NA	NA	NA	5	NA	3	HBLCNM	HBLCNM	BDW HIGH BAND CH3	NDS	BDW	S	SSOH				266
NA	NA	NA	NA	0	NA	16	HBLCRCMD	HBLCRCMD	LRCC - HIGH BAND CH3	NDS	BDW	S	SSOH				339
NA	NA	NA	NA	0	NA	8	HBLCTH	HBLCTH	HIGH BAND CH 3 THRESSET	NDS	BDW	S	SSOH				348
NA	NA	NA	NA	0	NA	8	HBLCTHOF	HBLCTHOF	HIGH BAND CH 3 THRESSET	NDS	BDW	S	SSOH				353
NA	NA	NA	NA	7	NA	1	HBLCTRIG	HBLCTRIG	EN HIGH BAND CHAN 2	NDS	BDW	S	SSOH				3065
NA	NA	NA	NA	0	NA	16	HBMCACMD	HBMCACMD	LACC - HIGH BAND CH2	NDS	BDW	S	SSOH				327
NA	NA	NA	NA	0	NA	16	HBMCADC	HBMCADC	HIBANDCH2AUXDELCORRE CTI	NDS	BDW	S	SSOH				361
NA	NA	NA	NA	0	NA	24	HBMCCF	HBMCCF	CENTERFREQ-HIBANDCH2	NDS	BDW	S	SSOH				294
NA	NA	NA	NA	0	NA	16	HBMCDC	HBMCDC	DELAY CORRECT- HIBANDCH2	NDS	BDW	S	SSOH				308
NA	NA	NA	NA	0	NA	16	HBMCFTC	HBMCFTC	FTCV HIBAND CH2:HILO	NDS	BDW	S	SSOH				270
NA	NA	NA	NA	0	NA	8	HBMCGAIN	HBMCGAIN	GAIN SET HIBAND CH2	NDS	BDW	S	SSOH				279
NA	NA	NA	NA	0	NA	16	HBMCGCAL	HBMCGCAL	A/D VALUE-HIBAND CH2	NDS	BDW	S	SSOH				285
NA	NA	NA	NA	0	NA	16	HBMCMAD	HBMCMAD	MID A/D VAL-HIBNDCH2	NDS	BDW	S	SSOH				318
NA	NA	NA	NA	2	NA	3	HBMCNM	HBMCNM	BDW HIGH BAND CH 2	NDS	BDW	S	SSOH				265
NA	NA	NA	NA	0	NA	16	HBMCRCMD	HBMCRCMD	LRCC - HIGH BAND CH2	NDS	BDW	S	SSOH				337
NA	NA	NA	NA	0	NA	8	HBMCTH	HBMCTH	HIGH BAND CH 2 THRESSET	NDS	BDW	S	SSOH				347
NA	NA	NA	NA	0	NA	8	HBMCTHOF	HBMCTHOF	HIGH BAND CH 2 THRESSET	NDS	BDW	S	SSOH				352
NA	NA	NA	NA	6	NA	1	HBMCTRIG	HBMCTRIG	EN HIGH BAND CHAN 2	NDS	BDW	S	SSOH				3065
NA	NA	NA	NA	0	NA	2	HBNOISCH	HBNOISCH	HI BAND CHAN SELECT	NDS	BDW	S	SSOH				3046
NA	NA	NA	NA	2	NA	6	BHNOISTH	HBNOISTH	AUTO HI BAND OFFSET	NDS	BDW	S	SSOH				3046
A	4	10	1	2	2	1	HCI1RATE	HCI1RATE	ESA 1 HCI HIGH/LOW RATE	ADS	ESA	DL	All Power-Up		1=Low 0=High		
A	4	11	1	2	2	1	HCI2RATE	HCI2RATE	ESA 2 HCI HIGH/LOW RATE	ADS	ESA	DL	All Power-Up		1=Low 0=High		
NA	NA	NA	NA	0	NA	8	HDRERCNT	HDRERCNT	EVENT HEADER ERR CNT	NDS	BDP-MP	S	SSOH				43
NA	NA	NA	NA	0	NA	32	HEADER	HEADER	FAH, F3H, BEH, 10H	NDS	BDP	S	SSOH				0
NA	NA	NA	NA	0	NA	1	HRDASCSM	HRDASCSM	HARDASIC CMDERREPORT	NDS	BDP	S	SSOH				3063
NA	NA	NA	NA	2	NA	1	HRDEESM	HRDEESM	HARDEEPROMFAILREPORT	NDS	BDP	S	SSOH				3062
NA	NA	NA	NA	0	NA	1	HRDMEMSM	HRDMEMSM	HARD MEM ERR REPORTS	NDS	BDP	S	SSOH				3062
NA	NA	NA	NA	0	NA	16	I16KDMPP	I16KDMPP	IP DUMP 16K POINTER	NDS	BDP-IP	S	SSOH				191
NA	NA	NA	NA	0	NA	8	IBDDUMP	IBDDUMP	BDX/D EV CUM DMP COUNT	NDS	BDP-IP	S	SSOH				141
NA	NA	NA	NA	0	NA	16	IDLELOOP	IDLELOOP	LASTIDLELOOPCNT:LOHI	NDS	BDD/X	S	SSOH				261
NA	NA	NA	NA	0	NA	8	ILGHTDMP	ILGHTDMP	YF LIGTNING EVDMPCNT	NDS	BDP-IP	S	SSOH				144
2	8	54	8	0	7	16	IMPPITA	IMPPITA	IMPULSE DEMAND PITCH (1 OF 2)	ADS	SPU A	S	Thruster	in-lbf-sec			
2	8	55	8	0	7	16	IMPPITA	IMPPITA	IMPULSE DEMAND PITCH (2 OF 2)	ADS	SPU A	S	Thruster	in-lbf-sec			
2	8	62	8	0	7	16	IMPPITB	IMPPITB	IMPULSE DEMAND PITCH (1 OF 2)	ADS	SPU B	S	Thruster	in-lbf-sec			
2	8	63	8	0	7	16	IMPPITB	IMPPITB	IMPULSE DEMAND PITCH (2 OF 2)	ADS	SPU B	S	Thruster	in-lbf-sec			
1	8	54	8	0	7	16	IMPROLA	IMPROLA	IMPULSE DEMAND ROLL (1 OF 2)	ADS	SPU A	S	Thruster	in-lbf-sec			
1	8	55	8	0	7	16	IMPROLA	IMPROLA	IMPULSE DEMAND ROLL (2 OF 2)	ADS	SPU A	S	Thruster	in-lbf-sec			
1	8	62	8	0	7	16	IMPROLB	IMPROLB	IMPULSE DEMAND ROLL (1 OF 2)	ADS	SPU B	S	Thruster	in-lbf-sec			
1	8	63	8	0	7	16	IMPROLB	IMPROLB	IMPULSE DEMAND ROLL (2 OF 2)	ADS	SPU B	S	Thruster	in-lbf-sec			
3	8	54	8	0	7	16	IMPYAWA	IMPYAWA	IMPULSE DEMAND YAW (1 OF 2)	ADS	SPU A	S	Thruster	in-lbf-sec			
3	8	55	8	0	7	16	IMPYAWA	IMPYAWA	IMPULSE DEMAND YAW (2 OF 2)	ADS	SPU A	S	Thruster	in-lbf-sec			

3	8	62	8	0	7	16	IMPYAWB	IMPYAWB	IMPULSE DEMAND YAW (1 OF 2)	ADS	SPU B	S	Thruster	in-lbf-sec		
3	8	63	8	0	7	16	IMPYAWB	IMPYAWB	IMPULSE DEMAND YAW (2 OF 2)	ADS	SPU B	S	Thruster	in-lbf-sec		
6	8	52	1	0	0	1	INTERRA	INTERRA	INTERRUPT ERROR INDICATOR	TT&C	SPU A	S	Early Orbit		O=No Interrupt Error Rcvd 1=Interrupt Error Rcvd	TLM (Error) Flag Word 52 (first word)
3	6	52	1	0	0	1	INTERRA	INTERRA	INTERRUPT ERROR INDICATOR	TT&C	SPU A	S	Normal Thruster		O=No Interrupt Error Rcvd 1=Interrupt Error Rcvd	TLM (Error) Flag Word 52 (first word)
6	8	60	1	0	0	1	INTERRB	INTERRB	INTERRUPT ERROR INDICATOR	TT&C	SPU B	S	Early Orbit		O=No Interrupt Error Rcvd 1=Interrupt Error Rcvd	TLM (Error) Flag Word 60 (first word)
3	6	60	1	0	0	1	INTERRB	INTERRB	INTERRUPT ERROR INDICATOR	TT&C	SPU B	S	Normal Thruster		O=No Interrupt Error Rcvd 1=Interrupt Error Rcvd	TLM (Error) Flag Word 60 (first word)
NA	NA	NA	NA	5	NA	3	INTPER	INTPER	INTEGRATION PERIOD	NDS	BDP	S	SSOH			3050
NA	NA	NA	NA	6	NA	9	INTRQERR	INTRQERR	BDY-P INTERSTATBT:UNDIN	NDS	BDY	S	SSOH			254
A	5	15	1	7	7	1	INVSTATA	INVSTATA	FLAG INDIC INVALID U/L STATUS	TT&C	SPU A	S	Power-Up		1=Invalid U/L Status 0=Valid U/L Status	
A	5	23	1	7	7	1	INVSTATB	INVSTATB	FLAG INDIC INVALID U/L STATUS	TT&C	SPU B	S	Power-Up		1=Invalid U/L Status 0=Valid U/L Status	
NA	NA	NA	NA	1	NA	1	IPADINT	IPADINT	DISABLE IP A/D INTER	NDS	BDP	S	SSOH			3008
NA	NA	NA	NA	2	NA	2	IPATRN	IPATRN	INCREMENTING PATTERN	NDS	BDP	S	SSOH			2988
NA	NA	NA	NA	1	NA	1	IPATTST	IPATTST	MARCHING RAM TEST	NDS	BDP	S	SSOH			2988
NA	NA	NA	NA	3	NA	1	IPBDEVLD	IPBDEVLD	BDX/D EVLD DISABL FLG1	NDS	BDP-IP	S	SSOH			159
NA	NA	NA	NA	6	NA	1	IPBDWECK	PIBDWECK	ENIP BDWGIM ERCHKING	NDS	BDP	S	SSOH			3008
NA	NA	NA	NA	5	NA	1	IPBDXECK	PIBDXECK	ENIP BDXGIM ERCHKING	NDS	BDP	S	SSOH			3008
NA	NA	NA	NA	4	NA	1	IPBDYECK	IPBDYECK	ENIP BDYGIMERCHKING	NDS	BDP	S	SSOH			3008
NA	NA	NA	NA	0	NA	16	IPCMHSTP	IPCMHSTP	CMD HISTORY POINTER	NDS	BDP-IP	S	SSOH			153
NA	NA	NA	NA	0	NA	1	IPDUMP	IPDUMP	IP DUMP REQ	NDS	BDP-MP	S	SSOH			47
NA	NA	NA	NA	2	NA	1	IPEERF	IPEERF	BDP IP EEPROM REFRES	NDS	BDP	S	SSOH			2993
NA	NA	NA	NA	2	NA	1	IPEERFEN	IPEERFEN	ENBDP IP EEPROM REFR	NDS	BDP	S	SSOH			2992
NA	NA	NA	NA	2	NA	1	IPEQCRST	IPEQCRST	IP EV&ERRQUEUECNTRST	NDS	BDP	S	SSOH			3036
NA	NA	NA	NA	7	NA	1	IPGDRECK	IPGDRECK	ENIP GDRGIM ERCHKING	NDS	BDP	S	SSOH			3008
NA	NA	NA	NA	4	NA	1	IPHSEVLD	IPHSEVLD	WHS EVLD DISABL FLG1	NDS	BDP-IP	S	SSOH			159
NA	NA	NA	NA	6	NA	1	IPHXEVLD	IPHXEVLD	WHX E LD DISABL FLG1	NDS	BDP-IP	S	SSOH			159
NA	NA	NA	NA	0	NA	3	IPINIT	IPINIT	INTRPROCINIT&SWAPSEL	NDS	BDP	S	SSOH			3011
NA	NA	NA	NA	5	NA	1	IPLSEVLD	IPLSEVLD	WLS EVLD DISABL FLG1	NDS	BDP-IP	S	SSOH			159
NA	NA	NA	NA	7	NA	1	IPLXEVLD	IPLXEVLD	WLX EVLD DISABL FLG1	NDS	BDP-IP	S	SSOH			159
NA	NA	NA	NA	0	NA	1	IPMFSINT	IPMFSINT	DISABIPMASFRMSYNCINT	NDS	BDP	S	SSOH			3008
NA	NA	NA	NA	3	NA	1	IPPFLRST	IPPFLRST	RESET IP POINT&FLAGS	NDS	BDP	S	SSOH			3036
NA	NA	NA	NA	2	NA	1	IPRAMSWP	IPRAMSWP	IP RAM SWAPPED	NDS	BDP-IP	S	SSOH			6
NA	NA	NA	NA	1	NA	1	IPROMSWP	IPROMSWP	IP ROM SWAP	NDS	BDP-IP	S	SSOH			6
NA	NA	NA	NA	0	NA	1	IPSCMRST	IPSCMRST	IP SET COMMAND RESET	NDS	BDP	S	SSOH			3036
NA	NA	NA	NA	4	NA	4	IPSHXFR	IPSHXFR	IP SOH XFER COUNTER	NDS	BDP-IP	S	SSOH			148
NA	NA	NA	NA	2	NA	1	IPSOH	IPSOH	SELECT DSOH FOR IP	NDS	BDP	S	SSOH			3008
NA	NA	NA	NA	1	NA	1	IPSOHREQ	IPSOHREQ	IP SOH REQUEST	NDS	BDP-IP	S	SSOH			167
NA	NA	NA	NA	0	NA	16	IPSTACKP	IPSTACKP	IP STACK POINTER	NDS	BDP-IP	S	SSOH			185
NA	NA	NA	NA	1	NA	1	IPTBSRST	IPTBSRST	IP TMPBUFFSETUPRESET	NDS	BDP	S	SSOH			3036
NA	NA	NA	NA	0	NA	8	IPTCHDMP	IPTCHDMP	MOTONPITCH EVDMPCNT	NDS	BDP-IP	S	SSOH			142
NA	NA	NA	NA	3	NA	1	IPTOINT	IPTOINT	INHIP HRDWRTIMOUTINT	NDS	BDP	S	SSOH			3008
NA	NA	NA	NA	6	NA	1	IPUPLD	IPUPLD	UPLOAD BDP IP	NDS	BDP	S	SSOH			2993
NA	NA	NA	NA	6	NA	1	IPUPLEN	IPUPLEN	ENABLE BDP IP UPLOAD	NDS	BDP	S	SSOH			2992
NA	NA	NA	NA	0	NA	1	IPUPLOAD	IPUPLOAD	UPLOAD ALLOW	NDS	BDP-IP	S	SSOH			146
NA	NA	NA	NA	2	NA	1	IPYDEVLD	IPYDEVLD	YD EVLD DISABLE FLG1	NDS	BDP-IP	S	SSOH			159
NA	NA	NA	NA	2	NA	1	IPYLEVLD	IPYLEVLD	YLT EVLD DISABL FLG2	NDS	BDP-IP	S	SSOH			160

NA	NA	NA	NA	0	NA	1	IPYPEVLD	IPYPEVLD	YMP EVLD DISABL FLG2	NDS	BDP-IP	S	SSOH				160
NA	NA	NA	NA	1	NA	1	IPYREVLD	IPYREVLD	YMR EVLD DISABL FLG2	NDS	BDP-IP	S	SSOH				160
NA	NA	NA	NA	0	NA	1	IPYSEVLD	IPYSEVLD	YS EVLD DISABLE FLG1	NDS	BDP-IP	S	SSOH				159
NA	NA	NA	NA	1	NA	1	IPYTEVLD	IPYTEVLD	YT EVLD DISABLE FLG1	NDS	BDP-IP	S	SSOH				159
5	1	27	8	0	7	8	IRCVAAGC	IRCVAAGC	CTDU A RCVR AGC VOLTAGE	TNP	CTDU	AH	All Power-Up	volts			
A	3	41	1	0	0	1	IRCVAANT	IRCVAANT	CTDU A RCVR TO RCVR ANT	TNP	CTDU	DL	All Power-Up		1=Good 0=Bad		
5	2	27	8	0	7	8	IRCVACV	IRCVACV	CTDU A RCVR CONV VOLTAGE	TNP	CTDU	AH	All Power-Up	volts			
A	7	41	1	3	3	1	IRCVAPWR	IRDVAPWR	CTDU A RCVR 28VDC ON/OFF	TNP	CTDU	DL	All Power-Up		1=On	0=Off	
5	1	28	8	0	7	8	IRCVBAGC	IRCVBAGC	CTDU B RCVR AGC VOLTAGE	TNP	CTDU	AH	All Power-Up	volts			
A	3	42	1	0	0	1	IRCVBANT	IRCVBANT	CTDU B RCVR TO RCVR ANT	TNP	CTDU	DL	All Power-Up		1=Good 0=Bad		
5	2	28	8	0	7	8	IRCVBCV	IRCVBCV	CTDU B RCVR CONV VOLTAGE	TNP	CTDU	AH	All Power-Up	volts			
A	7	42	1	2	2	1	IRCVBPWR	IRCVBPWR	CTDU B RCVR 28 VDC ON/OFF	TNP	CTDU	DL	All Power-Up		1=On	0=Off	
A	3	41	1	1	1	1	IRCVRA	IRCVRA	CTDU A RCVR ON/OFF	TNP	CTDU	DL	All Power-Up		1=Off	0=On	
A	3	42	1	1	1	1	IRCVRB	IRCVRB	CTDU B RCVR ON/OFF	TNP	CTDU	DL	All Power-Up		1=Off	0=On	
NA	NA	NA	NA	0	NA	8	IROLLDMP	IROLLDMP	MOTION ROLL EVDMPCNT	NDS	BDP-IP	S	SSOH				143
A	6	16	1	0	0	1	ISO12ARM	ISO12ARM	ISO LATCH VALVE PWR 1&2 ARM	RCS	LV	S	All Power-Up		1=Armed 0=Disarmed		
A	5	16	1	0	0	1	ISO12PWR	ISO12PWR	ISO LATCH VALVE PWR 1&2 ENAB	RCS	LV	S	All Power-Up		1=Enabled 0=Disabled		
A	5	64	1	0	0	1	ISOCLS1	ISOCLS1	ISOLATN LATCH VALVE 1 CLOSE	RCS	LV	DL	All Power-Up		1=Closed 0=Open		
A	5	64	1	1	1	1	ISOCLS2	ISOCLS2	ISOLATN LATCH VALVE 2 CLOSE	RCS	LV	DL	All Power-Up		1=Closed 0=Open		
A	6	64	1	0	0	1	ISOOPN1	ISOOPN1	ISOLATN LATCH VALVE 1 OPEN	RCS	LV	DL	All Power-Up		1=Open 0=Closed		
A	6	64	1	1	1	1	ISOOPN2	ISOOPN2	ISOLATN LATCH VALVE 2 OPEN	RCS	LV	DL	All Power-Up		1=Open 0=Closed		
NA	NA	NA	NA	0	NA	16	IWHSADMP	IWHSADMP	WH A EV CUM DMP CNT	NDS	BDP-IP	S	SSOH				175
NA	NA	NA	NA	0	NA	16	IWHSBDMP	IWHSBDMP	WHS B EV CUM DMP CNT	NDS	BDP-IP	S	SSOH				177
NA	NA	NA	NA	0	NA	16	IWLSADMP	IWLSADMP	WL A EV CUM DMP CNT	NDS	BDP-IP	S	SSOH				179
NA	NA	NA	NA	0	NA	16	IWLSBDMP	IWLSBDMP	WLS B EV CUM DMP CNT	NDS	BDP-IP	S	SSOH				181
A	3	41	1	3	3	1	IXMTAANT	IXMTAANT	CTDU A XMTR TO XMTR ANT	TNP	CTDU	DL	All Power-Up		1=Good	0=Bad	
A	2	25	8	0	7	8	IXMTACV	IXMTACV	CTDU A XMTR CONV VOLTAGE MON	TNP	CTDU	AH	All Power-Up	volts			
A	7	41	1	5	5	1	IXMTAPWR	IXMTAPWR	CTDU A XMIT 28 VDC ON/OFF	TNP	CTDU	DL	All Power-Up		1=On	0=Off	
A	1	25	8	0	7	8	IXMTARFP	IXMTARFP	CTDU A XMTR RF PWR OUT	TNP	CTDU	AH	All Power-Up	volts			
1	1	27	8	0	7	8	IXMTAT	IXMTAT	CTDU A XMTR TEMP	TNP	CTDU	AP	All Power-Up	Celsius			
A	3	42	1	3	3	1	IXMTBANT	IXMTBANT	CTDU B XMTR TO XMTR ANT	TNP	CTDU	DL	All Power-Up		1=Good	0=Bad	
A	2	26	8	0	7	8	IXMTBCV	IXMTBCV	CTDU B XMTR CONV VOLTAGE MON	TNP	CTDU	AH	All Power-Up	volts			
A	7	42	1	4	4	1	IXMTBPWR	IXMTBPWR	CTDU B XMTR 28 VDC ON/OFF	TNP	CTDU	DL	All Power-Up		1=On	0=Off	
A	1	26	8	0	7	8	IXMTBRFP	IXMTBRFP	CTDU B XMTR RF PWR OUT	TNP	CTDU	AH	All Power-Up	volts			
3	1	28	8	0	7	8	IXMTBT	IXMTBT	CTDU B XMTR TEMP	TNP	CTDU	AP	All Power-Up	Celsius			
A	3	41	1	2	2	1	IXMTRA	IXMTRA	CTDU A XMTR ON/OFF	TNP	CTDU	DL	All Power-Up		1=On	0=Off	
A	3	42	1	2	2	1	IXMTRB	IXMTRB	CTDU B XMTR ON/OFF	TNP	CTDU	DL	All Power-Up		1=On	0=Off	

NA	NA	NA	NA	0	NA	8	IYDDUMP	IYDDUMP	YD EV CUM DUMP COUNT	NDS	BDP-IP	S	SSOH				140
NA	NA	NA	NA	0	NA	8	IYFDUMP	IYFDUMP	YF EV CUM DUMP COUNT	NDS	BDP-IP	S	SSOH				139
NA	NA	NA	NA	0	NA	16	IYFTBIP	IYFTBIP	YF TMPBUFF I/P POINT	NDS	BDP-IP	S	SSOH				187
NA	NA	NA	NA	0	NA	16	IYFTBOP	IYFTBOP	YF TMPBUFFO/P POINT	NDS	BDP-IP	S	SSOH				189
NA	NA	NA	NA	0	NA	16	IYFTBQUE	IYFTBQUE	YF TEMP BUFF QUE CNT	NDS	BDP-IP	S	SSOH				183
7	5	52	8	0	7	16	JETIMERA	JETIMERA	DELTA-V JET SECONDS TIMER (1 OF 2)	ADS	SPU A	S	Thruster	seconds			
7	5	53	8	0	7	16	JETIMERA	JETIMERA	DELTA-V JET SECONDS TIMER (2 OF 2)	ADS	SPU A	S	Thruster	seconds			
7	5	60	8	0	7	16	JETIMERB	JETIMERB	DELTA-V JET SECONDS TIMER (1 OF 2)	ADS	SPU B	S	Thruster	seconds			
7	5	61	8	0	7	16	JETIMERB	JETIMERB	DELTA-V JET SECONDS TIMER (2 OF 2)	ADS	SPU B	S	Thruster	seconds			
7	6	52	8	0	7	16	JETSECAA	JETSECAA	DELTA-V JET SECONDS ACHIEVED (1 OF 2)	ADS	SPU A	S	Thruster	seconds			
7	6	53	8	0	7	16	JETSECAA	JETSECAA	DELTA-V JET SECONDS ACHIEVED (2 OF 2)	ADS	SPU A	S	Thruster	seconds			
7	6	60	8	0	7	16	JETSECAB	JETSECAB	DELTA-V JET SECONDS ACHIEVED (1 OF 2)	ADS	SPU B	S	Thruster	seconds			
7	6	61	8	0	7	16	JETSECAB	JETSECAB	DELTA-V JET SECONDS ACHIEVED (2 OF 2)	ADS	SPU B	S	Thruster	seconds			
7	5	54	8	0	7	16	JETSECDA	JETSECDA	DELTA-V JET SECONDS DURATION (1 OF 2)	ADS	SPU A	S	Thruster	seconds			
7	5	55	8	0	7	16	JETSECDA	JETSECDA	DELTA-V JET SECONDS DURATION (2 OF 2)	ADS	SPU A	S	Thruster	seconds			
7	5	62	8	0	7	16	JETSECDB	JETSECDB	DELTA-V JET SECONDS DURATION (1 OF 2)	ADS	SPU B	S	Thruster	seconds			
7	5	63	8	0	7	16	JETSECDB	JETSECDB	DELTA-V JET SECONDS DURATION (2 OF 2)	ADS	SPU B	S	Thruster	seconds			
2	7	58	8	0	7	8	KBOXIFT	KBOXIFT	BASE PNL/K-BOX I/F TEMP A	MSS	TCS	AP	All Power-Up	Celsius			
A	8	16	1	1	1	1	KG1	KG1	KG-46 (1) ON/OFF	TT&C	KG-46	S	All Power-Up		1=On	0=Off	
3	5	56	8	0	7	8	KG1CV5V	KG1CV5V	KG-46-1 CONV +5VDC OUT	TT&C	KG-46	AH	All Power-Up	volts			
A	8	16	1	5	5	1	KG2	KG2	KG-46 (2) ON/OFF	TT&C	KG-46	S	All Power-Up		1=On	0=Off	
3	6	56	8	0	7	8	KG2CV5V	KG2CV5V	KG-46-2 CONV +5VDC OUT	TT&C	KG-46	AH	All Power-Up	volts			
A	A	19	1	6	6	1	KIR1AUTH	KIR1AUTH	VCC WORD 3 AUTHENTICATE BIT	TT&C	KIR-23	S	All Power-Up		1=Authenticated Authenticated	0=Not	
A	A	19	1	7	7	1	KIR1B	KIR1B	VCC WORD 3 BUSY BIT	TT&C	KIR-23	S	All Power-Up		1=Not Busy 0=Busy		
A	A	51	1	6	6	1	KIR2AUTH	KIR2AUTH	VCC WORD 3 AUTHENTICATE BIT	TT&C	KIR-23	S	All Power-Up		1=Authenticated Authenticated	0=Not	
A	A	51	1	7	7	1	KIR2B	KIR2B	VCC WORD 3 BUSY BIT	TT&C	KIR-23	S	All Power-Up		1=Not Busy 0=Busy		
A	7	41	1	4	4	1	L12CAPWR	L12CAPWR	L11/L2 CONV A 28 VDC ON/OFF	TNP	LBS	DL	All Power-Up		1=On 0=Off		
A	7	42	1	3	3	1	L12CBPWR	L12CBPWR	L11/L2 CONV B 28 VDC ON/OFF	TNP	LBS	DL	All Power-Up		1=On 0=Off		
A	4	41	1	0	0	1	L12CVA	L12CVA	L11/L2 CONV A STATUS ON/STBY	TNP	LBS	DL	All Power-Up		1=On 0=Standby		
A	4	42	1	0	0	1	L12CVB	L12CVB	L11/L2 CONV B STATUS ON/STBY	TNP	LBS	DL	All Power-Up		1=On 0=Standby		
A	5	41	1	5	5	1	L1HPAA	L1HPAA	L1 HPA A STATUS	TNP	LBS	DL	All Power-Up		1=Connected 0=Not Connected		
1	3	27	8	0	7	8	L1HPAAT	L1HPAAT	L1 HPA A INTERNAL TEMP	TNP	LBS	AP	All Power-Up	Celsius			
A	5	42	1	5	5	1	L1HPAB	L1HPAB	L1 HPA B STATUS	TNP	LBS	DL	All Power-Up		1=Connected 0=Not Connected		

3	3	28	8	0	7	8	L1HPABT	L1HPABT	L1 HPA B INTERNAL TEMP	TNP	LBS	AP	All Power-Up	Celsius		
7	6	58	8	0	7	8	L1HPAIFT	L1HPAIFT	+X PAYLOAD PNL/L1 HPA I/F TEMP C	MSS	TCS	AP	All Power-Up	Celsius		
A	4	41	1	2	2	1	L1HPANRM	L1HPANRM	L1/L2 CONV A TO L1 HPA A (AND B TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
A	4	42	1	2	2	1	L1HPAXST	L1HPAXT	L1/L2 CONV B TO L1 HPA A (AND A TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
7	7	57	8	0	7	8	L1IPAIFT	L1PAIFT	+X PAYLOAD PNL/L2259 IPA I/F TEMP D	MSS	TCS	AP	All Power-Up	Celsius		
A	4	41	1	4	4	1	L1IPANRM	L1IPANRM	L1/L2 CONV A TO L1 IPA A (AND B TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
7	3	27	8	0	7	8	L1IPARFP	L1IPARFT	L1 MOD/IPA RF PWR OUT	TNP	LBS	AH	All Power-Up	watts		
A	4	42	1	4	4	1	L1IPAXST	L1IPAXST	L1/L2 CONV B TO L1 MOD IPA A (AND A TO B) XSTRAP	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
A	5	25	8	0	7	8	L1RFP	L1RFP	L1 HPA RF PWR OUT:L1 TOTAL	TNP	LBS	AH	All Power-Up	watts		
A	4	41	1	6	6	1	L1SYNNRM	L1SYNNRM	L1/L2 CONV A TO L1 SYN A (AND B TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
7	1	27	8	0	7	8	L1SYNRFP	SLSYNRFP	L1 SYNTHESIZER RF PWR OUT	TNP	LBS	AH	All Power-Up	watts		
A	4	42	1	6	6	1	L1SYNXST	L1SYNXST	L1/L2 CONV B TO L1 SYN A (AND A TO B) XSTRAP	TNP	LBS	DL	All Power-Up		1=Xstrap 0=Normal	
A	4	41	1	1	1	1	L1XMTCVA	L1XMTCVA	L1/L2 CONV A L1 XMIT ON/OFF	TNP	LBS	DL	All Power-Up		1=Off 0=On	
A	6	41	1	0	0	1	L1XMTCVB	L1XMTCVB	L1/L2 CONV B L1 XMIT STATUS	TNP	LBS	DL	All Power-Up		1=Off 0=On	
A	5	41	1	6	6	1	L2HPAA	L2HPAA	L2 HPA A STATUS	TNP	LBS	DL	All Power-Up		1=Connected 0=Not Connected	
1	4	27	8	0	7	8	L2HPAAT	L2HPAAT	L2 HPA A INTERNAL TEMP	TNP	LBS	AP	All Power-Up	Celsius		
A	5	42	1	6	6	1	L2HPAB	L2HPAB	L2 HPA B STATUS	TNP	LBS	DL	All Power-Up		1=Connected 0=Not Connected	
3	4	28	8	0	7	8	L2HPABT	L2HPABT	L2 HPA B INTERNAL TEMP	TNP	LBS	AP	All Power-Up	Celsius		
8	7	57	8	0	7	8	L2HPAIFT	L2HPAIFT	+X PAYLOAD PNL/L2260 HPA I/F TEMP B	MSS	TCS	AP	All Power-Up	Celsius		
A	4	41	1	3	3	1	L2HPANRM	L2HPANRM	L1/L2 CONV A TO L2 HPA A (AND B TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
A	4	42	1	3	3	1	L2HPAXST	L2HPAXST	L1/L2 CONV B TO L2 HPA A (AND A TO B) XSTRAP	TNP	LBS	DL	All Power-Up		1=Xstrap 0=Normal	
A	4	41	1	5	5	1	L2IPANRM	L2IPANRM	L1/L2 CONV A TO L2 IPA A (AND B TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
7	2	28	8	0	7	8	L2IPARFP	L2IPARFP	L2 MOD/IPA RF PWR OUT	TNP	LBS	AH	All Power-Up	watts		
A	4	42	1	5	5	1	L2IPAXST	L2IPAXST	L1/L2 CONV B TO L2 MOD IPA A (AND A TO B) XSTRAP	TNP	LBS	DL	All Power-Up		1=Xstrap 0=Normal	
A	5	26	8	0	7	8	L2RFP	L2RFP	L2 HPA RF PWR OUT:L2 TOTAL	TNP	LBS	AH	All Power-Up	watts		
A	4	41	1	7	7	1	L2SYNNRM	L2SYNNRM	L1/L2 CONV A TO L2 SYN A (AND B TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
7	1	28	8	0	7	8	L2SYNRFP	L2SYNRFP	L2 SYNTHESIZER RF PWR OUT	TNP	LBS	AH	All Power-Up	watts		
A	4	42	1	7	7	1	L2SYNXST	L2SYNXST	L1/L2 CONV B TO L2 SYN A (AND A TO B) XSTRAP	TNP	LBS	DL	All Power-Up		1=Xstrap 0=Normal	
A	4	42	1	1	1	1	L2XMTCVA	L2XMTCVA	L1/L2 CONV A L2 XMIT STATUS	TNP	LBS	DL	All Power-Up		1=Off 0=On	
A	6	42	1	0	0	1	L2XMTCVB	L2XMTCVB	L1/L2 CONV B L2 XMIT STATUS	TNP	LBS	DL	All Power-Up		1=Off 0=On	
NA	NA	NA	NA	0	NA	8	L3BDXEVT	L3BDXEVT	L3 BDX EVENT COUNTER	NDS	BDP-MP	S	SSOH			11
NA	NA	NA	NA	6	NA	1	L3BUFULL	L3BUFULL	L3 BUFF FULL FLAG	NDS	BDP-MP	S	SSOH			50
NA	NA	NA	NA	0	NA	8	L3COUNT	L3COUNT	FIRST BYTE OF INCCNT	NDS	BDP	S	SSOH			2987
A	5	41	1	0	0	1	L3CVA	L3CVA	L3 CONV A STATUS ON/STBY	TNP	LBS	DL	All Power-Up		1=Standby 0=On	

A	7	41	1	6	6	1	L3CVAPWR	L3CVAPWR	L3 CONV A 28 VDC ON/OFF	TNP	LBS	DL	All Power-Up		1=On 0=Off	
A	5	42	1	0	0	1	L3CVB	L3CVB	L3 CONV B STATUS ON/STBY	TNP	LBS	DL	All Power-Up		1=Standby 0=On	
A	7	42	1	5	5	1	L3CVBPWR	L3CVBPWR	L3 CONV B 28 VDC ON/OFF	TNP	LBS	DL	All Power-Up		1=On 0=Off	
NA	NA	NA	NA	0	NA	4	L3EVIMAX	L3EVIMAX	L3 EV_I MAX SECTION	NDS	BDP-MP	S	SSOH			50
NA	NA	NA	NA	0	NA	16	L3EVNTOP	L3EVNTOP	L3 EV INIT O/P POINT	NDS	BDP-MP	S	SSOH			73
NA	NA	NA	NA	0	NA	4	L3EVOSEC	L3EVOSEC	L3 EV INITIATED O/P SEC	NDS	BDP-MP	S	SSOH			52
NA	NA	NA	NA	3	NA	1	L3FIFOIN	L3FIFOIN	INH L3 FIFO INTERRUP	NDS	BDP	S	SSOH			3010
NA	NA	NA	NA	4	NA	1	L3FULL	L3FULL	L3 FULL,RM IN NON L3	NDS	BDP-MP	S	SSOH			50
A	5	41	1	7	7	1	L3HPAA	L3HPAA	L3 HPA A STATUS	TNP	LBS	DL	All Power-Up		1=Connected 0=Not Connected	
1	5	27	8	0	7	8	L3HPAAT	L3HPAAT	L3 HPA A INTERNAL TEMP	TNP	LBS	AP	All Power-Up	Celsius		
A	5	42	1	7	7	1	L3HPAB	L3HPAB	L3 HPA B STATUS	TNP	LBS	DL	All Power-Up		1=Connected 0=Not Connected	
3	5	28	8	0	7	8	L3HPABT	L3HPABT	L3 HPA B INTERNAL TEMP	TNP	LBS	AP	All Power-Up	Celsius		
7	5	58	8	0	7	8	L3HPAIFT	L3HPAIFT	+X PAYLOAD PNL/L2261 HPA I/F TEMP A	MSS	TCS	AP	All Power-Up	Celsius		
A	5	41	1	2	2	1	L3HPANRM	L3HPANRM	L3 CONV A TO L3 HPA A (AND B TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
A	5	42	1	2	2	1	L3HPAXST	L3PHAXST	L3 CONV A TO L3 HPA B (AND B TO A) XSTRAP	TNP	LBS	DL	All Power-Up		1=Xstrap 0=Normal	
NA	NA	NA	NA	0	NA	16	L3INPTP	L3INPTP	L3 INPUT POINTER	NDS	BDP-MP	S	SSOH			75
NA	NA	NA	NA	0	NA	4	L3INSEC	L3INSEC	L3 INPUT SECTION	NDS	BDP-MP	S	SSOH			51
NA	NA	NA	NA	3	NA	1	L3INTER	L3INTER	INT ERR FLG (L3 OUT)	NDS	BDP-MP	S	SSOH			41
A	5	41	1	3	3	1	L3IPANRM	L3IPANRM	L3 CONV A TO L3 MOD IPA A (AND B TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
7	3	28	8	0	7	8	L3IPARFP	L3IPARFP	L3 MOD/IPA RF PWR OUT	TNP	LBS	AH	All Power-Up	watts		
A	5	42	1	3	3	1	L3IPAXST	L3IPAXST	L3 CONV A TO L3 MOD IPA B (AND B TO A) XSTRAP	TNP	LBS	DL	All Power-Up		1=Xstrap 0=Normal	
NA	NA	NA	NA	1	NA	1	L3MRO23	L3MRO23	L3RDOTSEC2&3-IPUP32K	NDS	BDP	S	SSOH			3014
NA	NA	NA	NA	2	NA	1	L3MRO45	L3MRO45	L3RDOTSEC4&5-MPLO32K	NDS	BDP	S	SSOH			3014
NA	NA	NA	NA	3	NA	1	L3MRO67	L3MRO67	L3RDOUTSEC6&7-SEC4&5	NDS	BDP	S	SSOH			3014
NA	NA	NA	NA	4	NA	1	L3MRO89	L3MRO89	L3RDOUTSEC8&9-PAGE 1	NDS	BDP	S	SSOH			3014
NA	NA	NA	NA	5	NA	1	L3MROAB	L3MROAB	L3RDOUTSECA&B-PAGE 2	NDS	BDP	S	SSOH			3014
NA	NA	NA	NA	6	NA	1	L3MROCD	L3MROCD	L3RDOUTSECC&D-PAGE 3	NDS	BDP	S	SSOH			3014
NA	NA	NA	NA	7	NA	1	L3MROEF	L3MROEF	L3RDOUTSECE&F-PAGE 4	NDS	BDP	S	SSOH			3014
NA	NA	NA	NA	0	NA	16	L3MROOP	L3MROOP	L3 MEM READOUT POINT	NDS	BDP-IP	S	SSOH			195
NA	NA	NA	NA	3	NA	1	L3MROREQ	L3MROREQ	L3 MRO PACKET REQ	NDS	BDP-IP	S	SSOH			167
NA	NA	NA	NA	4	NA	3	L3NAVINS	L3NAVINS	L3 NAV BLK INS FREQ	NDS	BDP	S	SSOH			3015
NA	NA	NA	NA	5	NA	1	L3NOFULL	L3NOFULL	L3 FEEDME FLAG	NDS	BDP-MP	S	SSOH			50
NA	NA	NA	NA	0	NA	4	L3NSEN1	L3NSEN1	L3 NEXT SECT,ENTRY 1	NDS	BDP-MP	S	SSOH			56
NA	NA	NA	NA	4	NA	4	L3NSEN2	L3NSEN2	L3 NEXT SECT,ENTRY 2	NDS	BDP-MP	S	SSOH			56
NA	NA	NA	NA	0	NA	4	L3NSEN3	L3NSEN3	L3 NEXT SECT,ENTRY 3	NDS	BDP-MP	S	SSOH			57
NA	NA	NA	NA	4	NA	4	L3NSEN4	L3NSEN4	L3 NEXT SECT,ENTRY 4	NDS	BDP-MP	S	SSOH			57
NA	NA	NA	NA	0	NA	4	L3NSEN5	L3NSEN5	L3 NEXT SECT,ENTRY 5	NDS	BDP-MP	S	SSOH			58
NA	NA	NA	NA	4	NA	4	L3NSEN6	L3NSEN6	L3 NEXT SECT,ENTRY 6	NDS	BDP-MP	S	SSOH			58
NA	NA	NA	NA	0	NA	4	L3NSEN7	L3NSEN7	L3 NEXT SECT,ENTRY 7	NDS	BDP-MP	S	SSOH			59
NA	NA	NA	NA	4	NA	4	L3NSEN8	L3NSEN8	L3 NEXT SECT,ENTRY 8	NDS	BDP-MP	S	SSOH			59
NA	NA	NA	NA	0	NA	4	L3NSEN9	L3NSEN9	L3 NEXT SECT,ENTRY 9	NDS	BDP-MP	S	SSOH			60
NA	NA	NA	NA	0	NA	8	L3NSINP	L3NSINP	L3 NEXT I/P POINTER	NDS	BDP-MP	S	SSOH			53
NA	NA	NA	NA	0	NA	8	L3NSOUTP	L3NSOUTP	L3 NEXT O/P POINTER	NDS	BDP-MP	S	SSOH			54
NA	NA	NA	NA	0	NA	16	L3OUTPTP	L3OUTPTP	L3 OUTPUT POINTER	NDS	BDP-MP	S	SSOH			77
NA	NA	NA	NA	4	NA	4	L3OUTSEC	L3OUTSEC	L3 OUTPUT SECTION	NDS	BDP-MP	S	SSOH			52
A	3	25	8	0	7	8	L3RFP	L3RFP	L3 HPA RF PWR OUT:L3 TOTAL	TNP	LBS	AH	All Power-Up	watts		
NA	NA	NA	NA	7	NA	1	L3STAGE2	L3STAGE2	L3 2ND STAGE FLAG	NDS	BDP-MP	S	SSOH			50

7	7	58	8	0	7	8	L3SYNIFT	L3SYNIFT	+X PAYLOAD PNL/L2261 SYNTH I/F TEMP A	MSS	TCS	AP	All Power-Up	Celsius		
A	5	41	1	4	4	1	L3SYNNRM	L3SYNNRM	L3 CONV A TO L3 SYN A (AND B TO B) NORM	TNP	LBS	DL	All Power-Up		1=Normal 0=Xstrap	
7	2	27	8	0	7	8	L3SYNRFP	L3SYNRFP	L3 SYNTHESIZER RF PWR OUT	TNP	LBS	AH	All Power-Up	watts		
A	5	42	1	4	4	1	L3SYNXST	L3SYNXST	L3 CONV A TO L3 SYN B (AND B TO A) XSTRAP	TNP	LBS	DL	All Power-Up		1=Xstrap 0=Normal	
NA	NA	NA	NA	7	NA	1	L3TOCOND	L3TOCOND	L3 TURN-ON COND MET	NDS	BDP-IP	S	SSOH			167
NA	NA	NA	NA	5	NA	1	L3TONRST	L3TONRST	L3 TURN-ON RESET	NDS	BDP	S	SSOH			3036
NA	NA	NA	NA	0	NA	8	L3WHABF	L3WHABF	L3 WHS A BUFF EV CNT	NDS	BDP-MP	S	SSOH			12
NA	NA	NA	NA	0	NA	8	L3WHBBF	L3WHBBF	L3 WHS B BUFF EV CNT	NDS	BDP-MP	S	SSOH			13
NA	NA	NA	NA	0	NA	8	L3WLABF	L3WLABF	L3 WL A BUFF EV CNT	NDS	BDP-MP	S	SSOH			14
NA	NA	NA	NA	0	NA	8	L3WLBBF	L3WLBBF	L3 WLS B BUFF EV CNT	NDS	BDP-MP	S	SSOH			15
NA	NA	NA	NA	7	NA	1	L3XFER	L3XFER	ABORT L3 TRANSFER	NDS	BDP	S	SSOH			3009
A	5	41	1	1	1	1	L3XMTCVA	L3XMTCVA	L3 CONV A L3 XMT STATUS	TNP	LBS	DL	All Power-Up		1=Enabled 0=Disabled	
A	5	42	1	1	1	1	L3XMTCVB	L3XMTCVB	L3 CONV B L3 XMT STATUS	TNP	LBS	DL	All Power-Up		1=Enabled 0=Disabled	
NA	NA	NA	NA	0	NA	8	L3YDEVT	L3YDEVT	L3 YD EVENT COUNTER	NDS	BDP-MP	S	SSOH			10
NA	NA	NA	NA	0	NA	16	L3YFEVT	L3YFEVT	L3 YF EVENT COUNTER	NDS	BDP-MP	S	SSOH			8
NA	NA	NA	NA	2	NA	1	LBABUFF	LBABUFF	TURNOFFLOBAND A BUFF	NDS	BDP	S	SSOH			3064
NA	NA	NA	NA	3	NA	1	LBBBFDAT	LBBBFDAT	DONTSNDLOBAND B DATA	NDS	BDP	S	SSOH			3064
NA	NA	NA	NA	0	NA	2	LBFARCH	LBFARCH	LOW BAND CHAN SELECT	NDS	BDP	S	SSOH			3049
NA	NA	NA	NA	2	NA	6	LBFARTH	LBFARTH	LOBANDFALSEALARMRATE	NDS	BDP	S	SSOH			3049
NA	NA	NA	NA	0	NA	16	LBHCACMD	LBHCACMD	LACC - LOW BAND CH1	NDS	BDW	S	SSOH			331
NA	NA	NA	NA	0	NA	24	LBHCCF	LBHCCF	CENTERFREQ-LOBANDCH1	NDS	BDW	S	SSOH			300
NA	NA	NA	NA	0	NA	16	LBHCDC	LBHCDC	DELAY CORRECT- LOBANDCH1	NDS	BDW	S	SSOH			312
NA	NA	NA	NA	0	NA	16	LBHCFTC	LBHCFTC	FTCV LOBAND CH1:HILO	NDS	BDW	S	SSOH			274
NA	NA	NA	NA	0	NA	8	LBHCGAIN	LBHCGAIN	GAIN SET LOBAND CH1	NDS	BDW	S	SSOH			281
NA	NA	NA	NA	0	NA	8	LBHCGCAL	LBHCGCAL	A/D VALUE-LOBAND CH1	NDS	BDW	S	SSOH			289
NA	NA	NA	NA	0	NA	8	LBHCMAD	LBHCMAD	MID A/D VAL-LOBNDCH1	NDS	BDW	S	SSOH			322
NA	NA	NA	NA	5	NA	3	LBHCNM	LBHCNM	BDW LOW BAND CH 1	NDS	BDW	S	SSOH			267
NA	NA	NA	NA	0	NA	16	LBHCRCMD	LBHCRCMD	LRCC - LOW BAND CH1	NDS	BDW	S	SSOH			341
NA	NA	NA	NA	0	NA	8	LBHCTH	LBHCTH	LOW BAND CH 1 THRESSET	NDS	BDW	S	SSOH			349
NA	NA	NA	NA	0	NA	8	LBHCTHOF	LBHCTHOF	LOW BAND CH 1 THRESSET	NDS	BDW	S	SSOH			354
NA	NA	NA	NA	3	NA	1	LBHCTRIG	LBHCTRIG	EN LOW BAND CHAN 1	NDS	BDW	S	SSOH			3065
NA	NA	NA	NA	0	NA	16	LBMCACMD	LBMCACMD	LACC - LOW BAND CH2	NDS	BDW	S	SSOH			333
NA	NA	NA	NA	0	NA	24	LBMCCF	LBMCCF	CENTERFREQ-LOBANDCH2	NDS	BDW	S	SSOH			303
NA	NA	NA	NA	0	NA	16	LBMCDC	LBMCDC	DELAY CORRECT- LOBANDCH2	NDS	BDW	S	SSOH			314
NA	NA	NA	NA	0	NA	16	LBMCFTC	LBMCFTC	FTCV LOBAND CH2:HILO	NDS	BDW	S	SSOH			276
NA	NA	NA	NA	0	NA	8	LBMCGAIN	LBMCGAIN	GAIN SET LOBAND CH2	NDS	BDW	S	SSOH			282
NA	NA	NA	NA	0	NA	8	LBMCGCAL	LBMCGCAL	A/D VALUE-LOBAND CH2	NDS	BDW	S	SSOH			290
NA	NA	NA	NA	0	NA	8	LBMCMAD	LBMCMAD	MID A/D VAL-LOBNDCH2	NDS	BDW	S	SSOH			323
NA	NA	NA	NA	2	NA	3	LBMCNM	LBMCNM	BDW LOW BAND CH2	NDS	BDW	S	SSOH			267
NA	NA	NA	NA	0	NA	16	LBMCRCMD	LBMCRCMD	LRCC - LOW BAND CH 2	NDS	BDW	S	SSOH			343
NA	NA	NA	NA	0	NA	8	LBMCTH	LBMCTH	LOW BAND CH 2 THRESSET	NDS	BDW	S	SSOH			350
NA	NA	NA	NA	0	NA	8	LBMCTHOF	LBMCTHOF	LOW BAND CH 2 THRESSET	NDS	BDW	S	SSOH			355
NA	NA	NA	NA	4	NA	1	LBMCTRIG	LBMCTRIG	EN LOW BAND CHAN 2	NDS	BDP	S	SSOH			3065
NA	NA	NA	NA	0	NA	2	LBNOISCH	LBNOISCH	LOW BAND CHAN SELECT	NDS	BDP	S	SSOH			3048
NA	NA	NA	NA	2	NA	6	LBNOISTH	LBNOISTH	AUTO LOW BAND OFFSET	NDS	BDP	S	SSOH			3048
6	8	54	1	5	5	1	LDSH1EXA	LDSH1EXA	LOAD SHED SET 1 EXECUTED	TT&C	SPU A	S	Normal Thruster		0=Not Exectued 1=Executed	Power Flag Word
6	8	62	1	5	5	1	LDSH1EXB	LDSH1EXB	LOAD SHED SET 1 EXECUTED	TT&C	SPU B	S	Normal Thruster		0=Not Exectued 1=Executed	Power Flag Word
6	8	54	1	6	6	1	LDSH2EXA	LDSH2EXA	LOAD SHED SET 2 EXECUTED	TT&C	SPU A	S	Normal Thruster		0=Not Exectued 1=Executed	Power Flag Word

6	8	62	1	6	6	1	LDSH2EXB	LDSH2EXB	LOAD SHED SET 2 EXECUTED	TT&C	SPU B	S	Normal Thruster		0=Not Exectued 1=Executed	Power Flag Word
6	8	54	1	7	7	1	LDSH3EXA	LDSH3EXA	LOAD SHED SET 3 EXECUTED	TT&C	SPU A	S	Normal Thruster		0=Not Exectued 1=Executed	Power Flag Word
6	8	62	1	7	7	1	LDSH3EXB	LDSH3EXB	LOAD SHED SET 3 EXECUTED	TT&C	SPU B	S	Normal Thruster		0=Not Exectued 1=Executed	Power Flag Word
A	6	14	8	0	7	16	LEDCNTA	LEDCNTA	LOW LEVEL EVENT COUNTER (1 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
A	6	15	8	0	7	16	LEDCNTA	LEDCNTA	LOW LEVEL EVENT COUNTER (2 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
7	4	54	8	0	7	16	LEDCNTA	LEDCNTA	LOW LEVEL EVENT COUNTER (1 OF 2)	TT&C	SPU A	S	Normal	counts		
7	4	55	8	0	7	16	LEDCNTA	LEDCNTA	LOW LEVEL EVENT COUNTER (2 OF 2)	TT&C	SPU A	S	Normal	counts		
5	4	52	8	0	7	16	LEDCNTA	LEDCNTA	LOW LEVEL EVENT COUNTER (1 OF 2)	TT&C	SPU A	S	Thruster	counts		
5	4	53	8	0	7	16	LEDCNTA	LEDCNTA	LOW LEVEL EVENT COUNTER (2 OF 2)	TT&C	SPU A	S	Thruster	counts		
A	6	22	8	0	7	16	LEDCNTB	LEDCNTB	LOW LEVEL EVENT COUNTER (1 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
A	6	23	8	0	7	16	LEDCNTB	LEDCNTB	LOW LEVEL EVENT COUNTER (2 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
7	4	62	8	0	7	16	LEDCNTB	LEDCNTB	LOW LEVEL EVENT COUNTER (1 OF 2)	TT&C	SPU B	S	Normal	counts		
7	4	63	8	0	7	16	LEDCNTB	LEDCNTB	LOW LEVEL EVENT COUNTER (2 OF 2)	TT&C	SPU B	S	Normal	counts		
5	4	60	8	0	7	16	LEDCNTB	LEDCNTB	LOW LEVEL EVENT COUNTER (1 OF 2)	TT&C	SPU B	S	Thruster	counts		
5	4	61	8	0	7	16	LEDCNTB	LEDCNTB	LOW LEVEL EVENT COUNTER (2 OF 2)	TT&C	SPU B	S	Thruster	counts		
2	2	57	8	0	7	8	LINAT	LINAT	RCS LINE TEMP A	RCS	LIN	AP	All Power-Up	Celsius		
2	3	57	8	0	7	8	LINBT	LINBT	RCS LINE TEMP B	RCS	LIN	AP	All Power-Up	Celsius		
4	7	57	8	0	7	8	LINCT	LINCT	RCS LINE TEMP C	RCS	LIN	AP	All Power-Up	Celsius		
4	8	57	8	0	7	8	LINDT	LINDT	RCS LINE TEMP D	RCS	LIN	AP	All Power-Up	Celsius		
A	6	64	1	7	7	1	LLEDAPWR	LLEDAPWR	LLED A ON/OFF	TT&C	LLED	DL	All Power-Up		1=Off O=On	
3	2	58	8	0	7	8	LLEDAT	LLEDAT	LLED A TEMP	TT&C	LLED	AP	All Power-Up	Celsius		
A	8	64	1	4	4	1	LLEDBPWR	LLEDBPWR	LLED B ON/OFF	TT&C	LLED	DL	All Power-Up		1=Off O=On	
3	3	58	8	0	7	8	LLEDBT	LLEDBT	LLED B TEMP	TT&C	LLED	AP	All Power-Up	Celsius		
NA	NA	NA	NA	6	NA	1	LPRUN	LPRUN	LOAD PROGRAM AND RUN	NDS	BDP	S	SSOH			3067
NA	NA	NA	NA	5	NA	1	LPWAIT	LPWAIT	LOAD PROGRAM & WAIT	NDS	BDP	S	SSOH			3067
NA	NA	NA	NA	0	NA	8	LSDCMD	LSDCMD	LAST SENSORDIRECTCMD	NDS	BDP-IP	S	SSOH			163
A	3	14	8	0	7	16	LVCKSMPA	LVCKSMPA	LAST VALID CHECKSUM (1 OF 2)	TT&C	SPU A	S	Power-up	counts		
A	3	15	8	0	7	16	LVCKSMPA	LVCKSMPA	LAST VALID CHECKSUM (2 OF 2)	TT&C	SPU A	S	Power-up	counts		
A	3	22	8	0	7	16	LVCKSMPB	LVCKSMPB	LAST VALID CHECKSUM (1 OF 2)	TT&C	SPU B	S	Power-up	counts		
A	3	23	8	0	7	16	LVCKSMPB	LVCKSMPB	LAST VALID CHECKSUM (2 OF 2)	TT&C	SPU B	S	Power-up	counts		
A	8	14	8	0	7	16	LVCKSUMA	LVCKSUMA	LAST VALID CHECKSUM (1 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
A	8	15	8	0	7	16	LVCKSUMA	LVCKSUMA	LAST VALID CHECKSUM (2 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
8	8	54	8	0	7	16	LVCKSUMA	LVCKSUMA	LAST VALID CHECKSUM (1 OF 2)	TT&C	SPU A	S	Normal	counts		
8	8	55	8	0	7	16	LVCKSUMA	LVCKSUMA	LAST VALID CHECKSUM (2 OF 2)	TT&C	SPU A	S	Normal	counts		
7	8	54	8	0	7	16	LVCKSUMA	LVCKSUMA	LAST VALID CHECKSUM (1 OF 2)	TT&C	SPU A	S	Thruster	counts		
7	8	55	8	0	7	16	LVCKSUMA	LVCKSUMA	LAST VALID CHECKSUM (2 OF 2)	TT&C	SPU A	S	Thruster	counts		
A	8	22	8	0	7	16	LVCKSUMB	LVCKSUMB	LAST VALID CHECKSUM (1 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
A	8	23	8	0	7	16	LVCKSUMB	LVCKSUMB	LAST VALID CHECKSUM (2 OF 2)	TT&C	SPU B	S	Early Orbit	counts		
8	8	62	8	0	7	16	LVCKSUMB	LVCKSUMB	LAST VALID CHECKSUM (1 OF 2)	TT&C	SPU B	S	Normal	counts		
8	8	63	8	0	7	16	LVCKSUMB	LVCKSUMB	LAST VALID CHECKSUM (2 OF 2)	TT&C	SPU B	S	Normal	counts		

7	8	62	8	0	7	16	LVCKSUMB	LVCKSUMB	LAST VALID CHECKSUM (1 OF 2)	TT&C	SPU B	S	Thruster	counts		
7	8	63	8	0	7	16	LVCKSUMB	LVCKSUMB	LAST VALID CHECKSUM (2 OF 2)	TT&C	SPU B	S	Thruster	counts		
NA	NA	NA	NA	0	NA	16	LYFADDR	LYFADDR	YF TMPFUBLASTADDRUSE	NDS	BDP-IP	S	SSOH			193
NA	NA	NA	NA	0	NA	16	M16KDMPP	M16KDMPP	DUMP 16K POINTER	NDS	BDP-MP	S	SSOH			71
A	2	14	8	0	7	16	MACHERRA	MACHERRA	CONTENTS OF FAULT REG OF LAST MACH ERR	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)-1750a fault reg format
A	2	15	8	0	7	16	MACHERRA	MACHERRA	CONTENTS OF FAULT REG OF LAST MACH ERR	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)-1750a fault reg fmt
A	2	22	8	0	7	16	MACHERRB	MACHERRB	CONTENTS OF FAULT REG OF LAST MACH ERR	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)-1750a fault reg format
A	2	23	8	0	7	16	MACHERRB	MACHERRB	CONTENTS OF FAULT REG OF LAST MACH ERR	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)-1750a fault reg fmt
A	A	9	3	2	4	3	MAFRMCNT	MAFRMCNT	MASTER FRAME COUNTER	TT&C	TIU	S	All Power-Up		Binary equivalent-1 of decimal values 1 to 8	000 = MAF 1 through 111 = MAF 8
NA	NA	NA	NA	0	NA	2	MANHBCH	MANHBCH	HIGH BAND CH SELECT	NDS	BDP	S	SSOH			3044
NA	NA	NA	NA	2	NA	6	MANHBTH	MANHBTH	MAN HIBAND THRESHVAL	NDS	BDP	S	SSOH			3044
NA	NA	NA	NA	0	NA	2	MANLBCH	MANLBCH	LOW BAND CHAN SELECT	NDS	BDP	S	SSOH			3045
NA	NA	NA	NA	2	NA	6	MANLBTH	MANLBTH	MAN LOBAND THRESHVAL	NDS	BDP	S	SSOH			3045
NA	NA	NA	NA	0	NA	8	MBDDUMP	MBDDUMP	BDX/D EVENT DUMP COUNT	NDS	BDP-MP	S	SSOH			28
3	4	27	8	0	7	8	MDUAV1	MDUAV1	MDU A VOLTAGE MON 1	TNP	MDU	AH	All Power-Up	volts		
3	5	27	8	0	7	8	MDUAV2	MDUAV2	MDU A VOLTAGE MON 2	TNP	MDU	AH	All Power-Up	volts		
6	4	27	8	0	7	8	MDUBV1	MDUBV1	MDU A VOLTAGE MON 1	TNP	MDU	AH	All Power-Up	volts		
6	5	27	8	0	7	8	MDUBV2	MDUBV2	MDU A VOLTAGE MON 2	TNP	MDU	AH	All Power-Up	volts		
A	A	43	1	5	5	1	MDUBYPAS	MDUBYPAS	MDU BYPASS MODE ENA/DISA	TT&C	CDU	S	All Power-Up		1=Enabled 0=Disabled	
A	7	41	1	7	7	1	MDUCAPWR	MDUCAPWR	MDU A 28 VDC ON/OFF	TT&C	MDU	DL	All Power-Up		1=On 0=Off	
A	7	42	1	6	6	1	MDUCBPWR	MDUCBPWR	MDU CONV B 28 VDC ON/OFF	TT&C	MDU	DL	All Power-Up		1=On 0=Off	
A	8	16	1	3	3	1	MDUCLKA	MDUCLKA	CDU A MDU CLK ENA/DISA	TT&C	CDU	S	All Power-Up		1=Enabled 0=Disabled	
A	8	16	1	7	7	1	MDUCLKB	MDUCLKB	CDU B MDU CLK ENA/DISA	TT&C	CDU	S	All Power-Up		1=Enabled 0=Disabled	
A	1	41	1	0	0	1	MDUCVA	MDUCVA	MDU CONV A STATUS ON/STBY	TNP	MDU	DL	All Power-Up		1=On 0=Standby	
A	1	42	1	0	0	1	MDUCVB	MDUCVB	MDU CONV B STATUS ON/STBY	TNP	MDU	DL	All Power-Up		1=On 0=Standby	
A	6	12	8	0	7	16	MDUDATAA	MDUDATAA	LAST MDU INPUT DATA READ	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits)
A	6	13	8	0	7	16	MDUDATAA	MDUDATAA	LAST MDU INPUT DATA READ	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits)
A	6	20	8	0	7	16	MDUDATAB	MDUDATAB	LAST MDU INPUT DATA READ	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits)
A	6	21	8	0	7	16	MDUDATAB	MDUDATAB	LAST MDU INPUT DATA READ	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits)
A	A	4	7	1	7	1	MDUNMBR	MDUNMBR	MDU MESSAGE NUMBER	TNP	MDU	S	All Power-Up		MDU Msg Nos. 0-127	
A	A	4	1	0	0	1	MDUTBIT	MDUTBIT	MDU MEMORY OPERATING MODE	TNP	MDU	S	All Power-Up		0=SRAM 1=PROM	
NA	NA	NA	NA	0	NA	8	MEMLDH	MEMLDH	MEM LOAD ADDR(8MSB)	NDS	BDP	S	SSOH			2989
NA	NA	NA	NA	0	NA	8	MEMLDL	MEMLDL	MEM LOAD ADDR(8 LSB)	NDS	BDP	S	SSOH			2990
NA	NA	NA	NA	0	NA	8	MEMLOAD	MEMLOAD	MEMORY LOAD DATA	NDS	BDP	S	SSOH			2991
NA	NA	NA	NA	2	NA	1	MEMPAR	MEMPAR	DISABLE MEMORYPARITY	NDS	BDP	S	SSOH			3066
NA	NA	NA	NA	5	NA	1	MEMPARSM	MEMPARSM	MEM PARITYERR REPORT	NDS	BDP	S	SSOH			3062
NA	NA	NA	NA	5	NA	3	MEMSLCT	MEMSLCT	MEMORY SELECTIONBITS	NDS	BDP	S	SSOH			2988
NA	NA	NA	NA	0	NA	1	MFSINTER	MFSINTER	INT ERR FLG(MFS_S-D)	NDS	BDP-MP	S	SSOH			41
A	A	9	3	5	7	3	MIFRMCNT	MIFRMCNT	MINOR FRAME COUNTER	TT&C	TIU	S	All Power-Up		Binary equivalent-1 of decimal values 1 to 8	000 = MIF 1 through 111 = MIF 8
NA	NA	NA	NA	0	NA	8	MIPCMDER	MIPCMDER	MP+IP CMD ERR CUMCNT	NDS	BDP-IP	S	SSOH			155
NA	NA	NA	NA	0	NA	8	MIPCMDNP	MIPCMDNP	MP+IP CMD OPNOT CNT	NDS	BDP-IP	S	SSOH			156
3	8	52	8	0	7	16	MLOADCTA	MLOADCTA	MEMORY LOAD COUNTER (1 OF 2)	TT&C	SPU A	S	Early Orbit	counts		
3	8	53	8	0	7	16	MLOADCTA	MLOADCTA	MEMORY LOAD COUNTER (2 OF 2)	TT&C	SPU A	S	Early Orbit	counts		

7	8	52	8	0	7	16	MLOADCTA	MLOADCTA	MEMORY LOAD COUNTER (1 OF 2)	TT&C	SPU A	S	Normal	counts			
7	8	53	8	0	7	16	MLOADCTA	MLOADCTA	MEMORY LOAD COUNTER (2 OF 2)	TT&C	SPU A	S	Normal	counts			
3	8	60	8	0	7	16	MLOADCTB	MLOADCTB	MEMORY LOAD COUNTER (1 OF 2)	TT&C	SPU B	S	Early Orbit	counts			
3	8	61	8	0	7	16	MLOADCTB	MLOADCTB	MEMORY LOAD COUNTER (2 OF 2)	TT&C	SPU B	S	Early Orbit	counts			
7	8	60	8	0	7	16	MLOADCTB	MLOADCTB	MEMORY LOAD COUNTER (1 OF 2)	TT&C	SPU B	S	Normal	counts			
7	8	61	8	0	7	16	MLOADCTB	MLOADCTB	MEMORY LOAD COUNTER (2 OF 2)	TT&C	SPU B	S	Normal	counts			
3	4	55	1	5	5	1	MMGMACTA	MMGMACTA	MOMENTUM MGMT UNLOADING ACTUATOR	TT&C	SPU A	S	Normal Thruster		0=Thrusters 1=Torquers		ADS Flag Word
3	4	63	1	5	5	1	MMGMACTB	MMGMACTB	MOMENTUM MGMT UNLOADING ACTUATOR	TT&C	SPU B	S	Normal Thruster		0=Thrusters 1=Torquers		ADS Flag Word
3	4	55	1	0	0	1	MMGMTENA	MMGMTENA	MOMENTUM MGMT UNLOADING ACTUATOR	TT&C	SPU A	S	Normal Thruster		0=Disabled 1=Enabled		ADS Flag Word
3	4	63	1	0	0	1	MMGMTENB	MMGMTENB	MOMENTUM MGMT UNLOADING ACTUATOR	TT&C	SPU B	S	Normal Thruster		0=Disabled 1=Enabled		ADS Flag Word
4	4	54	1	5	5	1	MODCNVA	MODCNVA	ADS MODE CONVERGENCE INDICATOR	TT&C	SPU A	S	Normal		0=Mode Did Not Converge 1=Mode Converged		Mode Flag Word
3	4	52	1	5	5	1	MODCNVA	MODCNVA	ADS MODE CONVERGENCE INDICATOR	TT&C	SPU A	S	Thruster		0=Mode Did Not Converge 1=Mode Converged		Mode Flag Word
4	4	62	1	5	5	1	MODCNVB	MODCNVB	ADS MODE CONVERGENCE INDICATOR	TT&C	SPU B	S	Normal		0=Mode Did Not Converge 1=Mode Converged		Mode Flag Word
3	4	60	1	5	5	1	MODCNVB	MODCNVB	ADS MODE CONVERGENCE INDICATOR	TT&C	SPU B	S	Thruster		0=Mode Did Not Converge 1=Mode Converged		Mode Flag Word
4	4	55	1	3	3	1	MODSWCHA	MODSWCHA	AUTONOMOUS ADS MODE SWITCH	TT&C	SPU A	S	Normal		0=Do Not Allow Autonomous Mode Switch 1=Allow Autonomous Mode Switch		Mode Flag Word
3	4	53	1	3	3	1	MODSWCHA	MODSWCHA	AUTONOMOUS ADS MODE SWITCH	TT&C	SPU A	S	Thruster		0=Do Not Allow Autonomous Mode Switch 1=Allow Autonomous Mode Switch		Mode Flag Word
4	4	63	1	3	3	1	MODSWCHB	MODSWCHB	AUTONOMOUS ADS MODE SWITCH	TT&C	SPU B	S	Normal		0=Do Not Allow Autonomous Mode Switch 1=Allow Autonomous Mode Switch		Mode Flag Word
3	4	61	1	3	3	1	MODSWCHB	MODSWCHB	AUTONOMOUS ADS MODE SWITCH	TT&C	SPU B	S	Thruster		0=Do Not Allow Autonomous Mode Switch 1=Allow Autonomous Mode Switch		Mode Flag Word
NA	NA	NA	NA	7	NA	1	MOINTMSK	MOINTMSK	MOTION INTERRUPT MASK	NDS	BDY	S	SSOH				211
NA	NA	NA	NA	0	NA	1	MOSAMPRT	MOSAMPRT	HIGH/LOW SAMPLE RATE	NDS	BDY	S	SSOH				2969
NA	NA	NA	NA	7	NA	1	MOSRATE	MOSRATE	HIGH/LOW RATE	NDS	BDY	S	SSOH				217
NA	NA	NA	NA	6	NA	2	MOSTORE	MOSTORE	BDPSTORCNTRLFORMOTDT	NDS	BDP	S	SSOH				3013
NA	NA	NA	NA	5	NA	1	MOTMOVRT	MOTMOVRT	DISABMOTIONMEMOVRWRT	NDS	BDP	S	SSOH				3013
NA	NA	NA	NA	6	NA	1	MOTOVRT	MOTOVRT	DISABLOVERWRITMOTION	NDS	BDP	S	SSOH				2969
NA	NA	NA	NA	7	NA	1	MOTSAVE	MOTSAVE	SAVE MOTION	NDS	BDP	S	SSOH				2969
NA	NA	NA	NA	0	NA	16	MPCMHSIP	MPCMHSIP	CMD HISTORY I/P POINTER	NDS	BDP-MP	S	SSOH				36
NA	NA	NA	NA	3	NA	1	MPDDEVLD	MPDDEVLD	EV LD DISABLE FLG2:BDD	NDS	BDP-MP	S	SSOH				45
NA	NA	NA	NA	6	NA	2	MPDMPPG	MPDMPPG	MP DUMP PAGE NUMBER	NDS	BDP-MP	S	SSOH				47
NA	NA	NA	NA	3	NA	1	MPDUMP	MPDUMP	MP DUMP	NDS	BDP-MP	S	SSOH				47

NA	NA	NA	NA	3	NA	1	MPDXEVLD	MPDXEVLD	EV LD DISABLE FLG1:BDX	NDS	BDP-MP	S	SSOH			44
NA	NA	NA	NA	3	NA	1	MPEERF	MPEERF	BDP MP EEPROM REFRES	NDS	BDP	S	SSOH			2993
NA	NA	NA	NA	3	NA	1	MPEERFEN	MPEERFEN	ENBDP MP EEPROM REFR	NDS	BDP	S	SSOH			2992
NA	NA	NA	NA	0	NA	1	MPEOMER	MPEOMER	MP EOM ERROR FLAG	NDS	BDP-IP	S	SSOH			158
NA	NA	NA	NA	6	NA	1	MPEQCRST	MPEQCRST	STORE-ALL RESET	NDS	BDP	S	SSOH			3036
NA	NA	NA	NA	4	NA	1	MPFIFO	MPFIFO	SI HARDWARE RESET	NDS	BDP	S	SSOH			3011
NA	NA	NA	NA	4	NA	1	MPHSEVLD	MPHSEVLD	EV LD DISABLE FLG1:WHS	NDS	BDP-MP	S	SSOH			44
NA	NA	NA	NA	6	NA	1	MPHXEVLD	MPHXEVLD	EV LD DISABLE FLG1:WHX	NDS	BDP-MP	S	SSOH			44
NA	NA	NA	NA	0	NA	8	MPITCH	MPITCH	MOTION PITCH COUNTER	NDS	BDP-MP	S	SSOH			24
NA	NA	NA	NA	5	NA	1	MPLSEVLD	MPLSEVLD	EV LD DISABLE FLG1:WLS	NDS	BDP-MP	S	SSOH			44
NA	NA	NA	NA	7	NA	1	MPLXEVLD	MPLXEVLD	EV LD DISABLE FLG1:WLX	NDS	BDP-MP	S	SSOH			44
NA	NA	NA	NA	5	NA	1	MPMFSINT	MPMFSINT	DISABMPMASFRMSYNCINT	NDS	BDP	S	SSOH			3011
NA	NA	NA	NA	7	NA	1	MPPFLRST	MPPFLRST	RESET MP POINT&FLAGS	NDS	BDP	S	SSOH			3036
NA	NA	NA	NA	4	NA	1	MPRAMSWP	MPRAMSWP	MP RAM SWAPPED	NDS	BDP-MP	S	SSOH			6
NA	NA	NA	NA	3	NA	1	MPROMSWP	MPROMSWP	MP ROM SWAP	NDS	BDP-MP	S	SSOH			6
NA	NA	NA	NA	4	NA	1	MPSCRMRST	MPRSCMRST	MP SET CMDS RESET	NDS	BDP	S	SSOH			3036
NA	NA	NA	NA	0	NA	4	MPSHRCV	MPSHRCV	MP SOH RECEIVAL CNT	NDS	BDP-IP	S	SSOH			148
NA	NA	NA	NA	5	NA	1	MPSOHREQ	MPSOHREQ	MP SOH REQUEST	NDS	BDP-IP	S	SSOH			167
NA	NA	NA	NA	0	NA	16	MPSTACKP	MPSTACKP	MP STACK POINTER	NDS	BDP-MP	S	SSOH			69
NA	NA	NA	NA	0	NA	8	MPTCHDMP	MPTCHDMP	MOTION PITCH EV CNT	NDS	BDP-MP	S	SSOH			34
NA	NA	NA	NA	7	NA	1	MPUPLD	MPUPLD	UPLOAD BDP MP	NDS	BDP	S	SSOH			2993
NA	NA	NA	NA	7	NA	1	MPUPLEN	MPUPLEN	ENABLE BDP MP UPLOAD	NDS	BDP	S	SSOH			2992
NA	NA	NA	NA	0	NA	1	MPUPLOAD	MPUPLOAD	UPLOAD ALLOW	NDS	BDP-MP	S	SSOH			48
NA	NA	NA	NA	2	NA	1	MPYDEVLD	MPYDEVLD	EV LD DISABLE FLG1:YD	NDS	BDP-MP	S	SSOH			44
NA	NA	NA	NA	2	NA	1	MPYLEVLD	MPYLEVLD	EV LD DISABLE FLG2:YLT	NDS	BDP-MP	S	SSOH			45
NA	NA	NA	NA	0	NA	1	MPYPEVLD	MPYPEVLD	EV LD DISABLE FLG2:YMP	NDS	BDP-MP	S	SSOH			45
NA	NA	NA	NA	1	NA	1	MPYREVLD	MPYREVLD	EV LD DISABLE FLG2:YMR	NDS	BDP-MP	S	SSOH			45
NA	NA	NA	NA	0	NA	1	MPYSEVLD	MPYSEVLD	EV LD DISABLE FLG1:YS	NDS	BDP-MP	S	SSOH			44
NA	NA	NA	NA	1	NA	1	MPYTEVLD	MPYTEVLD	EV LD DISABLE FLG1:YT	NDS	BDP-MP	S	SSOH			44
NA	NA	NA	NA	0	NA	8	MROLL	MROLL	MOTION ROLL COUNTER	NDS	BDP-MP	S	SSOH			25
NA	NA	NA	NA	0	NA	8	MROLLDMP	MROLLDMP	MOTION ROLL EV CNT	NDS	BDP-MP	S	SSOH			35
A	A	43	1	6	6	1	MSGMODE	MSGMODE	SERIAL MESSAGE MODE ON/OFF	TT&C	CDU	S	All Power-Up		1=On 0=Off	
NA	NA	NA	NA	6	NA	1	MTSTL3RO	MTSTL3RO	L3 OP FLAG MEM TEST	NDS	BDP-MP	S	SSOH			49
NA	NA	NA	NA	0	NA	8	MWHSADMP	MWHSADMP	WH A EVENT DUMP CNT	NDS	BDP-MP	S	SSOH			30
NA	NA	NA	NA	0	NA	8	MWHSBDMP	MWHSBDMP	WHS B EVENT DUMP CNT	NDS	BDP-MP	S	SSOH			31
NA	NA	NA	NA	0	NA	8	MWLSADMP	MWLSADMP	WL A EVENT DUMP CNT	NDS	BDP-MP	S	SSOH			32
NA	NA	NA	NA	0	NA	8	MWLSBDMP	MWLSBDMP	WLS B EVENT DUMP CNT	NDS	BDP-MP	S	SSOH			33
NA	NA	NA	NA	0	NA	8	MYDDUMP	MYDDUMP	YD EVENT DUMP COUNT	NDS	BDP-MP	S	SSOH			27
NA	NA	NA	NA	0	NA	8	MYFDUMP	MYFDUMP	YF EVENT DUMP COUNT	NDS	BDP-MP	S	SSOH			26
NA	NA	NA	NA	0	NA	16	MYFTBIP	MYFTBIP	YF TMP BUF I/P POINT	NDS	BDP-MP	S	SSOH			101
NA	NA	NA	NA	0	NA	16	MYFTBOP	MYFTBOP	YF TMP BUF O/P POINT	NDS	BDP-MP	S	SSOH			103
NA	NA	NA	NA	0	NA	8	MYFTBQUE	MYFTBQUE	YF TMP BUF QUEUE CNT	NDS	BDP-MP	S	SSOH			63
NA	NA	NA	NA	7	NA	1	NEWL3RO	NEWL3RO	L3 OP FLG NEW L3 ROL	NDS	BDP-MP	S	SSOH			49
NA	NA	NA	NA	0	NA	8	NL3BDEVT	NL3BDEVT	NON-L3 BX EV/BDD CNT	NDS	BDP-MP	S	SSOH			19
NA	NA	NA	NA	0	NA	16	NL3INPTP	LN3INPTP	NON-L3 INPUT POINTER	NDS	BDP-MP	S	SSOH			79
NA	NA	NA	NA	4	NA	4	NL3INSEC	NL3INSEC	NON-L3 INPUT SECTION	NDS	BDP-MP	S	SSOH			51
NA	NA	NA	NA	0	NA	8	NL3LIGHT	NL3LIGHT	NON-L3 LIGHTNING EV CNT	NDS	BDP-MP	S	SSOH			17
NA	NA	NA	NA	2	NA	1	NL3MOVRT	NL3MOVRT	DISABNONL3MEMOVRWRIT	NDS	BDP	S	SSOH			3013
NA	NA	NA	NA	4	NA	4	NL3NSEN1	NL3NSEN1	NONL3 NEXT SECT ENT 1	NDS	BDP-MP	S	SSOH			60
NA	NA	NA	NA	0	NA	4	NL3NSEN2	NL3NSEN2	NONL3 NEXT SECT ENT 2	NDS	BDP-MP	S	SSOH			61
NA	NA	NA	NA	4	NA	4	NL3NSEN3	NL3NSEN3	NONL3 NEXT SECT ENT 3	NDS	BDP-MP	S	SSOH			61
NA	NA	NA	NA	0	NA	8	NL3NSINP	NL3NSINP	NONL3 NEXT I/P POINT	NDS	BDP-MP	S	SSOH			55
NA	NA	NA	NA	0	NA	8	NL3WHABF	NL3WHABF	NON-L3 WH A BUF CNT	NDS	BDP-MP	S	SSOH			20
NA	NA	NA	NA	0	NA	8	NL3WHBBF	NL3WHBBF	NON-L3 WHS B BUF CNT	NDS	BDP-MP	S	SSOH			21
NA	NA	NA	NA	0	NA	8	NL3WLABF	NL3WLABF	NON-L3 WL A BUF CNT	NDS	BDP-MP	S	SSOH			22
NA	NA	NA	NA	0	NA	8	NL3WLBBF	NL3WLBBF	NON-L3 WLS B BUF CNT	NDS	BDP-MP	S	SSOH			23

NA	NA	NA	NA	0	NA	8	NL3YDEVT	NL3YDEVT	NON-L3 YD EV COUNTER	NDS	BDP-MP	S	SSOH			18
NA	NA	NA	NA	0	NA	8	NL3YFEVT	NL3YFEVT	NON-L3 YF EV COUNTER	NDS	BDP-MP	S	SSOH			16
NA	NA	NA	NA	2	NA	6	NOISETH	NOISETH	QFS=3, NOISE THRESH LEVEL	NDS	BDP	S	SSOH			3053
3	4	54	1	3	3	1	NOONMIDA	NOONMIDA	NOON-MIDNIGHT INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Not in Noon/Midnight Region 1=In Noon/Midnight Region	ADS Flag Word
3	4	62	1	3	3	1	NOONMIDB	NOONMIDB	NOON-MIDNIGHT INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Not in Noon/Midnight Region 1=In Noon/Midnight Region	ADS Flag Word
NA	NA	NA	NA	0	NA	4	NOSMONCH	NOSMONCH	NOISE MONCHHI/LOBAND	NDS	BDP	S	SSOH			3050
NA	NA	NA	NA	6	NA	1	NPMSDATA	NPMSDATA	NPMS DATA STORE	NDS	BDY	S	SSOH			221
NA	NA	NA	NA	7	NA	1	NPMSGAIN	NPMSGAIN	NPMS BAND PASS GAIN SEL	NDS	BDY	S	SSOH			221
NA	NA	NA	NA	6	NA	1	NPMSIMSK	NPMSIMSK	NPMS DATA INTERRUPT EN	NDS	BDY	S	SSOH			211
NA	NA	NA	NA	6	NA	1	NPMSINT	NPMSINT	NPMS DATA TESTINTERRUPT	NDS	BDP	S	SSOH			2970
NA	NA	NA	NA	2	NA	1	NPMSRNG	NPMSRNG	NPMS RANGE	NDS	BDY	S	SSOH			211
A	4	10	1	4	4	1	OCUA	OCUA	OCU A ENABLED/DISABLED	EPS	OCU	DL	All Power-Up		1=Disabled 0=Enabled	
A	4	11	1	4	4	1	OCUB	OCUB	OCU B ENABLED/DISABLED	EPS	OCU	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	11	1	4	4	1	ODD2PWR	ODD2PWR	REA ODD 0.2 LBF POWER ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	11	1	0	0	1	ODD2X	ODD2X	REA ODD 0.2 LBF X ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	11	1	1	1	1	ODD2Y	ODD2Y	REA ODD 0.2 LBF Y ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	11	1	6	6	1	ODD5PWR	ODD5PWR	REA ODD 5.0 LBF POWER ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	11	1	2	2	1	ODD5Z	ODD5Z	REA ODD 5.0 LBF Z ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
A	6	11	1	3	3	1	ODDCBHTR	ODDCBHTR	REA ODD CATBED HEATER ENABLED	RCS	REA	DL	All Power-Up		1=Disabled 0=Enabled	
NA	NA	NA	NA	2	NA	1	PAGEDIS	PAGEDIS	PAGE DISABLE	NDS	BDP-MP	S	SSOH			47
2	8	27	8	0	7	8	PCEACAL	PCEACAL	PCE A C/S CAL MON	TT&C	PCE	AP	All Power-Up	mA		
1	2	56	8	0	7	8	PCEACV5V	PCEACV5V	PCE A CONV +5VDC OUT	TT&C	PCE	AH	All Power-Up	volts		
1	5	58	8	0	7	8	PCEACVT	PCEACVT	PCE A CONV TEMP	TT&C	PCE	AP	All Power-Up	Celsius		
A	8	41	1	4	4	1	PCEAOVRC	PCEAOVRC	PCE A DPC OVERCURR FAULT	TT&C	PCE	DL	All Power-Up		1=No Overcurrent 0=Overcurrent	
4	8	28	8	0	7	8	PCEBCAL	PCEBCAL	PCE B C/S CAL MON	TT&C	PCE	AP	All Power-Up	mA		
4	3	56	8	0	7	8	PCEBCV5V	PCEBCV5V	PCE B CONV +5VDC OUT	TT&C	PCE	AH	All Power-Up	volts		
1	6	58	8	0	7	8	PCEBCVT	PCEBCVT	PCE B CONV TEMP	TT&C	PCE	AP	All Power-Up	Celsius		
A	8	42	1	4	4	1	PCEBOVRC	PCEBOVRC	PCE B DPC OVERCURR FAULT	TT&C	PCE	DL	All Power-Up		1=No Overcurrent 0=Overcurrent	
A	1	35	8	0	7	8	PCECURH1	PCECURH1	BUS CURR TO PCE HI-PWR (T1)	EPS	PRU	AH	All Power-Up	amps		
A	5	35	8	0	7	8	PCECURH2	PCECURH2	BUS CURR TO PCE HI-PWR (T2)	EPS	PRU	AH	All Power-Up	amps		
A	8	35	8	0	7	8	PCECURLO	PCECURLO	BUSS CURR TO PCE LO-PWR	EPS	PRU	AH	All Power-Up	amps		
8	2	57	8	0	7	8	PCEIFT	PCEIFT	-X PAYLOAD PNL/PCE I/F TEMP A	MSS	TCS	AP	All Power-Up	Celsius		
2	8	52	8	0	7	16	PITCHMEA	PITCHMEA	PITCH MOMENTUM ERROR (1 OF 2)	ADS	SPU A	S	Normal Thruster	in-lbf-sec		
2	8	53	8	0	7	16	PITCHMEA	PITCHMEA	PITCH MOMENTUM ERROR (2 OF 2)	ADS	SPU A	S	Normal Thruster	in-lbf-sec		
2	8	60	8	0	7	16	PITCHMEB	PITCHMEB	PITCH MOMENTUM ERROR (1 OF 2)	ADS	SPU B	S	Normal Thruster	in-lbf-sec		
2	8	61	8	0	7	16	PITCHMEB	PITCHMEB	PITCH MOMENTUM ERROR (2 OF 2)	ADS	SPU B	S	Normal Thruster	in-lbf-sec		
NA	NA	NA	NA	1	NA	1	PITCHMSG	PITCHMST	DISABLE PITCH MSGS	NDS	BDP	S	SSOH			2971

NA	NA	NA	NA	0	NA	1	PITCHPWR	PITCHPWR	PITCH POWER ENABLE	NDS	BDY	S	SSOH			217
5	5	24	8	0	7	8	PITCHT	PITCHT	PITCH ACCELEROMETER TEMP	NDS	BDY	S	All Power-Up	Celsius		SSOH Byte 3418
NA	NA	NA	NA	0	NA	16	PITCHTC	PITCHTC	PITCH TRIGGER COUNT	NDS	BDY	S	SSOH			207
NA	NA	NA	NA	0	NA	1	PITCHTRG	PITCHTRG	PITCH TRIGGER	NDS	BDP	S	SSOH			2967
2	6	54	8	0	7	16	PITERRA	PITERRA	PITCH ATTITUDE ERROR (1 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
2	6	55	8	0	7	16	PITERRA	PITERRA	PITCH ATTITUDE ERROR (2 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
2	6	62	8	0	7	16	PITERRB	PITERRB	PITCH ATTITUDE ERROR (1 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
2	6	63	8	0	7	16	PITERRB	PITERRB	PITCH ATTITUDE ERROR (2 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
2	7	52	8	0	7	16	PITINTA	PITINTA	PITCH ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
2	7	53	8	0	7	16	PITINTA	PITINTA	PITCH ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
2	7	60	8	0	7	16	PITINTB	PITINTB	PITCH ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU B	S	Thruster	rad/sec		
2	7	61	8	0	7	16	PITINTB	PITINTB	PITCH ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU B	S	Thruster	rad/sec		
2	7	52	8	0	7	16	PITINTNA	PITINTNA	PITCH ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU A	S	Normal	rad/sec		
2	7	53	8	0	7	16	PITINTNA	PITINTNA	PITCH ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU A	S	Normal	rad/sec		
2	7	60	8	0	7	16	PITINTNB	PITINTNB	PITCH ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU B	S	Normal	rad/sec		
2	7	61	8	0	7	16	PITINTNB	PITINTNB	PITCH ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU B	S	Normal	rad/sec		
2	7	54	8	0	7	16	PITRATEA	PITRATEA	PITCH ATTITUDE RATE ERROR (1 OF 2)	ADS	SPU A	S	Normal Thruster	rad/sec		
2	7	55	8	0	7	16	PITRATEA	PITRATEA	PITCH ATTITUDE RATE ERROR (2 OF 2)	ADS	SPU A	S	Normal Thruster	rad/sec		
2	7	62	8	0	7	16	PITRATEB	PITRATEB	PITCH ATTITUDE RATE ERROR (1 OF 2)	ADS	SPU B	S	Normal Thruster	rad/sec		
2	7	63	8	0	7	16	PITRATEB	PITRATEB	PITCH ATTITUDE RATE ERROR (2 OF 2)	ADS	SPU B	S	Normal Thruster	rad/sec		
4	4	54	1	0	0	1	PITSSELA	PITSSELA	THRUST CNTRL PITS MATRIX SELECT	TT&C	SPU A	S	Thruster		0=Primary 1=Backup	Thruster Flag Word 54 (first word)
4	4	62	1	0	0	1	PITSSELB	PITSSELB	THRUST CNTRL PITS MATRIX SELECT	TT&C	SPU B	S	Thruster		0=Primary 1=Backup	Thruster Flag Word 62 (first word)
NA	NA	NA	NA	0	NA	8	PNMBRAH	PNMBRAH	PENUMBRA (8 MSB)	NDS	BDP	S	SSOH			2958
NA	NA	NA	NA	0	NA	8	PNMBRAL	PNMBRAL	PENUMBRA (8 LSB)	NDS	BDP	S	SSOH			2959
A	4	12	8	0	7	16	PORTRDA	PORTRDA	RESULTS OF PORT READ COMMAND	TT&C	SPU A	S	Power-Up			Word 1 of 2 (first 8 bits) format dep on port read
A	4	13	8	0	7	16	PORTRDA	PORTRDA	RESULTS OF PORT READ COMMAND	TT&C	SPU A	S	Power-Up			Word 2 of 2 (second 8 bits) fmt dep on port read
A	4	20	8	0	7	16	PORTRDB	PORTRDB	RESULTS OF PORT READ COMMAND	TT&C	SPU B	S	Power-Up			Word 1 of 2 (first 8 bits) format dep on port read
A	4	21	8	0	7	16	PORTRDB	PORTRDB	RESULTS OF PORT READ COMMAND	TT&C	SPU B	S	Power-Up			Word 2 of 2 (second 8 bits) fmt dep on port read
NA	NA	NA	NA	6	NA	1	PROCDIAG	PROCDIAG	RUN PROCESSOR DIAG	NDS	BDP	S	SSOH			3066
NA	NA	NA	NA	5	NA	1	PROCNTRL	PROCNTRL	MP/IP CONTROL	NDS	BDP-MP	S	SSOH			47
NA	NA	NA	NA	0	NA	8	PROMCKSM	PROMCKSM	PROM CHECKSUM	NDS	BDD/X	S	SSOH			264
3	5	58	8	0	7	8	PRUIFT	PRUIFT	BASE PNL/PRU I/F TEMP C	MSS	TCS	AP	All Power-Up	Celsius		
2	5	56	8	0	7	8	PTCCUR	PTCCUR	PTC COIL CURRENT	ADS	MTC	AH	All Power-Up	mA		
A	1	16	1	5	5	1	PTCFWD	PTCFWD	PTC FORWARD COIL ENABLED	ADS	MTC	S	All Power-Up		1=Enabled 0=Disabled	

A	3	64	1	0	0	1	PTCFWDA	PTCFWDA	SPU A PTC FWD ON/OFF	ADS	MTC	DL	All Power-Up		1=Off 0=On	
A	4	64	1	0	0	1	PTCFWDB	PTCFWDB	SPU B PTC FWD ON/OFF	ADS	MTC	DL	All Power-Up		1=Off 0=On	
NA	NA	NA	NA	1	NA	2	PTCHCNT	PTCHCNT	PITCH COUNT CODE	NDS	BDP	S	SSOH			2967
NA	NA	NA	NA	0	NA	1	PTCHPWR	PTCHPWR	PITCH POWER	NDS	BDP	S	SSOH			2970
NA	NA	NA	NA	4	NA	1	PTCHSTST	PTCHSTST	PITCH SYSTEM TEST	NDS	BDY	S	SSOH			217
NA	NA	NA	NA	3	NA	5	PTCHTL	PTCHTL	PITCH TRIGGER LEVEL	NDS	BDP	S	SSOH			2967
NA	NA	NA	NA	2	NA	1	PTCHTRIG	PTCHTRIG	PITCH TRIGGER ENABLE	NDS	BDY	S	SSOH			217
A	2	16	1	5	5	1	PTCREV	PTCREV	PTC REVERSE COIL ENABLED	ADS	MTC	S	All Power-Up		1=Enabled 0=Disabled	
A	3	64	1	1	1	1	PRCREVA	PTCREVA	SPU A PTC REV ON/OFF	ADS	MTC	DL	All Power-Up		1=Off 0=On	
A	4	64	1	1	1	1	PRCREVB	PTCREVB	SPU B PTC REV ON/OFF	ADS	MTC	DL	All Power-Up		1=Off 0=On	
A	4	64	1	6	6	1	PTCSPPOL	PTCSPPOL	PTC SPR POLARITY	ADS	MTC	DL	All Power-Up		1=Forward 0=Reverse	
A	3	16	1	5	5	1	PTCSPR	PTCSPR	PTC SPR COIL ENABLED	ADS	MTC	S	All Power-Up		1=Enabled 0=Disabled	
A	3	64	1	2	2	1	PTCSPRA	PTCSPRA	SPU A PTC SPR ON/OFF	ADS	MTC	DL	All Power-Up		1=Off 0=On	
A	4	64	1	2	2	1	PTCSPRB	PTCSPRB	SPU B PTC SPR ON/OFF	ADS	MTC	DL	All Power-Up		1=Off 0=On	
NA	NA	NA	NA	4	NA	2	PULSEAMP	PULSEAMP	PULSE AMP BITS: PORT 39	NDS	BDY	S	SSOH			216
NA	NA	NA	NA	6	NA	2	PULSEWID	PULSEWID	PULSE WIDTH BITS:PORT39	NDS	BDY	S	SSOH			216
NA	NA	NA	NA	3	NA	1	PYSLCOIN	PYSLCOIN	PITCH-SLOW COINCIDEN	NDS	BDP	S	SSOH			2969
NA	NA	NA	NA	6	NA	2	QFSMODE	QFSMODE	QFS MODE	NDS	BDP	S	SSOH			3052
8	3	57	8	0	7	8	RAFSIFT	RAFSIFT	-X PAYLOAD PNL/RAFS I/F TEMP C	MSS	TCS	AP	All Power-Up	Celsius		
NA	NA	NA	NA	2	NA	2	RAMPPEAK	RAMPPEAK	RAMP PEAK BITS: PORT 39	NDS	BDY	S	SSOH			216
6	5	58	8	0	7	8	RAPIFT	RAPIFT	EARTH PNL/RAP I/F TEMP C	MSS	TCS	AP	All Power-Up	Celsius		
A	7	34	8	0	7	8	RAPPRFP	RAPPRFP	RAP RF OUTPUT POWER	RAP	RAP	AH	All Power-Up	watts		
A	7	41	1	2	2	1	RAPPWR	RAPPWR	RAP 28 VDC ON/OFF	RAP	RAP	DL	All Power-Up		1=On 0=Off	
A	3	64	1	6	6	1	RAPSTS	RAPSTS	RAP STATUS ON/OFF	RAP	RAP	DL	All Power-Up		1=On 0=Off	
5	6	56	8	0	7	8	RAPT	RAPT	RAP TEMP	RAP	RAP	AH	All Power-Up	Celsius		
2	3	56	8	0	7	8	RCVR1AGC	RCVR1AGC	S-BAND RCVR 1 SIGNAL STR	TT&C	SBT	AH	All Power-Up	dBm		
A	6	16	1	3	3	1	RCVR1PRN	RCVR1PRN	S-BAND RCVR 1 PRN ENABLE	TT&C	SBT	S	All Power-Up		1=Disabled 0=Enabled	
A	7	16	1	3	3	1	RCVR1SQL	RCVR1SQL	S-BAND RCVR 1 SQUELCH	TT&C	SBT	S	All Power-Up		1=Off 0=On	
6	2	56	8	0	7	8	RCVR1T	RCVR1T	S-BAND RCVR 1 TEMP	TT&C	SBT	AH	All Power-Up	Celsius		
5	4	56	8	0	7	8	RCVR2AGC	RCVR2AGC	S-BAND RCVR 2 SIGNAL STR	TT&C	SBT	AH	All Power-Up	dBm		
A	6	16	1	7	7	1	RCVR2PRN	RCVR2PRN	S-BAND RCVR 2 PRN ENABLE	TT&C	SBT	S	All Power-Up		1=Disabled 0=Enabled	
A	7	16	1	7	7	1	RCVR2SQL	RCVR2SQL	S-BAND RCVR 2 SQUELCH	TT&C	SBT	S	All Power-Up		1=Off 0=On	
6	4	56	8	0	7	8	RCVR2T	RCVR2T	S-BAND RCVR 2 TEMP	TT&C	SBT	AH	All Power-Up	Celsius		
6	7	54	1	0	0	1	RDMGMENA	RDMGMENA	RDMGMT ENABLE INDICATOR	TT&C	SPU A	S	Normal		0=REDMAN Disabled 1=REDMAN Enabled	RDMGMT Flag Word 54 (upper half-first word)
6	5	52	1	0	0	1	RDMGMENA	RDMGMENA	RDMGMT ENABLE INDICATOR	TT&C	SPU A	S	Thruster		0=REDMAN Disabled 1=REDMAN Enabled	RDMGMT Flag Word 52 (upper half-first word)
6	7	62	1	0	0	1	RDMGMENB	RDMGMENB	RDMGMT ENABLE INDICATOR	TT&C	SPU B	S	Normal		0=REDMAN Disabled 1=REDMAN Enabled	RDMGMT Flag Word 62 (upper half-first word)
6	5	60	1	0	0	1	RDMGMENB	RDMGMENB	RDMGMT ENABLE INDICATOR	TT&C	SPU B	S	Thruster		0=REDMAN Disabled 1=REDMAN Enabled	RDMGMT Flag Word 60 (upper half-first word)

A	5	14	8	0	7	16	REA1PWA	REA1PWA	REA 1 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	5	15	8	0	7	16	REA1PWA	REA1PWA	REA 1 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	5	22	8	0	7	16	REA1PWB	REA1PWB	REA 1 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	5	23	8	0	7	16	REA1PWB	REA1PWB	REA 1 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	6	14	8	0	7	16	REA2PWA	REA2PWA	REA 2 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	6	15	8	0	7	16	REA2PWA	REA2PWA	REA 2 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	6	22	8	0	7	16	REA2PWB	REA2PWB	REA 2 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	6	23	8	0	7	16	REA2PWB	REA2PWB	REA 2 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	7	14	8	0	7	16	REA3PWA	REA3PWA	REA 3 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	7	15	8	0	7	16	REA3PWA	REA3PWA	REA 3 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	7	22	8	0	7	16	REA3PWB	REA3PWB	REA 3 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	7	23	8	0	7	16	REA3PWB	REA3PWB	REA 3 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	8	14	8	0	7	16	REA4PWA	REA4PWA	REA 4 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	8	15	8	0	7	16	REA4PWA	REA4PWA	REA 4 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	8	22	8	0	7	16	REA4PWB	REA4PWB	REA 4 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	8	23	8	0	7	16	REA4PWB	REA4PWB	REA 4 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	2	52	8	0	7	16	REA5PWA	REA5PWA	REA 5 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	2	53	8	0	7	16	REA5PWA	REA5PWA	REA 5 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	2	60	8	0	7	16	REA5PWB	REA5PWB	REA 5 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	2	61	8	0	7	16	REA5PWB	REA5PWB	REA 5 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	2	54	8	0	7	16	REA6PWA	REA6PWA	REA 6 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	2	55	8	0	7	16	REA6PWA	REA6PWA	REA 6 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	2	62	8	0	7	16	REA6PWB	REA6PWB	REA 6 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	2	63	8	0	7	16	REA6PWB	REA6PWB	REA 6 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	3	52	8	0	7	16	REA7PWA	REA7PWA	REA 7 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	3	53	8	0	7	16	REA7PWA	REA7PWA	REA 7 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	3	60	8	0	7	16	REA7PWB	REA7PWB	REA 7 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	3	61	8	0	7	16	REA7PWB	REA7PWB	REA 7 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU B	S	Thruster	seconds		

A	3	54	8	0	7	16	REA8PWA	REA8PWA	REA 8 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	3	55	8	0	7	16	REA8PWA	REA8PWA	REA 8 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU A	S	Thruster	seconds		
A	3	62	8	0	7	16	REA8PWB	REA8PWB	REA 8 PULSEWIDTH ATTITUDE PAIR (1 OF 2)	ADS	SPU B	S	Thruster	seconds		
A	3	63	8	0	7	16	REA8PWB	REA8PWB	REA 8 PULSEWIDTH ATTITUDE PAIR (2 OF 2)	ADS	SPU B	S	Thruster	seconds		
NA	NA	NA	NA	5	NA	1	RECINTER	RECINTER	INTER(PARA FIFO REC)	NDS	BDP-MP	S	SSOH			41
A	3	13	1	7	7	1	RELOADA	RELOADA	FLAG INDIC RELOAD OF FLIGHT S/W OCCUR	TT&C	SPU A	S	Power-Up		1=Reload S/W Occurred 0=Reload S/W Failed	
A	3	21	1	7	7	1	RELOADB	RELOADB	FLAG INDIC RELOAD OF FLIGHT S/W OCCUR	TT&C	SPU B	S	Power-Up		1=Reload S/W Occurred 0=Reload S/W Failed	
NA	NA	NA	NA	6	NA	1	RESETREQ	RESETREQ	RESET FIFOS&16 EOMS	NDS	BDP-IP	S	SSOH			167
NA	NA	NA	NA	0	NA	2	RETUNE	RETUNE	QFS=2OR3,MINRETUNE TIME	NDS	BDP	S	SSOH			3053
NA	NA	NA	NA	1	NA	1	RLLPWR	RLLPWR	ROLL POWER	NDS	BDP	S	SSOH			2970
6	8	52	1	6	6	1	RMAENA	RMAENA	RATE MEASURING ASSEMBLY ENABLE	TT&C	SPU A	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 52 (lower half-first word)
7	4	54	1	6	6	1	RMAENA	RMAENA	RATE MEASURING ASSEMBLY ENABLE	TT&C	SPU A	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 54 (lower half-first word)
6	8	60	1	6	6	1	RMAENB	RMAENB	RATE MEASURING ASSEMBLY ENABLE	TT&C	SPU B	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 60 (lower half-first word)
7	4	62	1	6	6	1	RMAENB	RMAENB	RATE MEASURING ASSEMBLY ENABLE	TT&C	SPU B	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 62 (lower half-first word)
A	1	16	1	0	0	1	RMAP1PWR	RMAP1PWR	RMA PITCH 1 28VDC ON/OFF	ADS	RMA	S	All Power-Up		1=On 0=Off	
A	7	64	1	5	5	1	RMAP1RAT	RMAP1RAT	RMA PITCH 1 RATE RANGE HI/LO	ADS	RMA	DL	All Power-Up		1=High 0=Low	
4	5	57	8	0	7	8	RMAP1T	RMAP1T	RMA PITCH-1 TEMP	ADS	RMA	AP	All Power-Up	Celsius		
A	2	16	1	0	0	1	RMAP2PWR	RMAP2PWR	RMA PITCH 2 28VDC ON/OFF	ADS	RMA	S	All Power-Up		1=On 0=Off	
A	8	64	1	5	5	1	RMAP2RAT	RMAP2RAT	RMA PITCH 2 RATE RANGE HI/LO	ADS	RMA	DL	All Power-Up		1=High 0=Low	
7	5	57	8	0	7	8	RMAP2T	RMAP2T	RMA PITCH-2 TEMP	ADS	RMA	AP	All Power-Up	Celsius		
A	4	14	8	0	7	16	RMAPFILA	RMAPFILA	FILTERED RMA PITCH OUTPUT (1 OF 2)	ADS	SPU A	S	Early Orbit	radians		
A	4	15	8	0	7	16	RMAPFILA	RMAPFILA	FILTERED RMA PITCH OUTPUT (2 OF 2)	ADS	SPU A	S	Early Orbit	radians		
A	3	14	8	0	7	16	RMAPFILA	RMAPFILA	FILTERED RMA PITCH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
A	3	15	8	0	7	16	RMAPFILA	RMAPFILA	FILTERED RMA PITCH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
A	4	22	8	0	7	16	RMAPFILB	RMAPFILB	FILTERED RMA PITCH OUTPUT (1 OF 2)	ADS	SPU B	S	Early Orbit	radians		
A	4	23	8	0	7	16	RMAPFILB	RMAPFILB	FILTERED RMA PITCH OUTPUT (2 OF 2)	ADS	SPU B	S	Early Orbit	radians		
A	3	22	8	0	7	16	RMAPFILB	RMAPFILB	FILTERED RMA PITCH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
A	3	23	8	0	7	16	RMAPFILB	RMAPFILB	FILTERED RMA PITCH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
A	4	52	1	7	7	25	RMAPITA	RMAPITA	RMA PITCH OUTPUT (1 OF 4)	ADS	SPU A	S	Early Orbit	counts		
A	4	53	8	0	7	25	RMAPITA	RMAPITA	RMA PITCH OUTPUT (2 OF 4)	ADS	SPU A	S	Early Orbit	counts		
A	4	54	8	0	7	25	RMAPITA	RMAPITA	RMA PITCH OUTPUT (3 OF 4)	ADS	SPU A	S	Early Orbit	counts		
A	4	55	8	0	7	25	RMAPITA	RMAPITA	RMA PITCH OUTPUT (4 OF 4)	ADS	SPU A	S	Early Orbit	counts		
2	5	52	1	7	7	25	RMAPITA	RMAPITA	RMA PITCH OUTPUT (1 OF 4)	ADS	SPU A	S	Normal Thruster	counts		

2	5	53	8	0	7	25	RMAPITA	RMAPITA	RMA PITCH OUTPUT (2 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
2	5	54	8	0	7	25	RMAPITA	RMAPITA	RMA PITCH OUTPUT (3 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
2	5	55	8	0	7	25	RMAPITA	RMAPITA	RMA PITCH OUTPUT (4 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
A	4	60	1	7	7	25	RMAPITB	RMAPITB	RMA PITCH OUTPUT (1 OF 4)	ADS	SPU B	S	Early Orbit	counts		
A	4	61	8	0	7	25	RMAPITB	RMAPITB	RMA PITCH OUTPUT (2 OF 4)	ADS	SPU B	S	Early Orbit	counts		
A	4	62	8	0	7	25	RMAPITB	RMAPITB	RMA PITCH OUTPUT (3 OF 4)	ADS	SPU B	S	Early Orbit	counts		
A	4	63	8	0	7	25	RMAPITB	RMAPITB	RMA PITCH OUTPUT (4 OF 4)	ADS	SPU B	S	Early Orbit	counts		
2	5	60	1	7	7	25	RMAPITB	RMAPITB	RMA PITCH OUTPUT (1 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
2	5	61	8	0	7	25	RMAPITB	RMAPITB	RMA PITCH OUTPUT (2 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
2	5	62	8	0	7	25	RMAPITB	RMAPITB	RMA PITCH OUTPUT (3 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
2	5	63	8	0	7	25	RMAPITB	RMAPITB	RMA PITCH OUTPUT (4 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
A	1	16	1	4	4	1	RMAR1PWR	RMAR1PWR	RMA ROLL 1 28 VDC ON/OFF	ADS	RMA	S	All Power-Up		1=On 0=Off	
A	7	64	1	6	6	1	RMAR1RAT	RMAR1RAT	RMA ROLL 1 RATE RANGE HI/LO	ADS	RMA	DL	All Power-Up		1=High 0=Low	
4	4	57	8	0	7	8	RMAR1T	RMAR1T	RMA ROLL-1 TEMP	ADS	RMA	AP	All Power-Up	Celsius		
A	2	16	1	4	4	1	RMAR2PWR	RMAR2PWR	RMA ROLL 2 28 VDC ON/OFF	ADS	RMA	S	All Power-Up		1=On 0=Off	
A	8	64	1	6	6	1	RMAR2RAT	RMAR2RAT	RMA ROLL 2 RATE RANGE HI/LO	ADS	RMA	DL	All Power-Up		1=High 0=Low	
7	4	57	8	0	7	8	RMAR2T	RMAR2T	RMA ROLL-2 TEMP	ADS	RMA	AP	All Power-Up	Celsius		
A	2	14	8	0	7	16	RMARFILA	RMARFILA	FILTERED RMA ROLL OUTPUT (1 OF 2)	ADS	SPU A	S	All	radians		
A	2	15	8	0	7	16	RMARFILA	RMARFILA	FILTERED RMA ROLL OUTPUT (2 OF 2)	ADS	SPU A	S	All	radians		
A	2	22	8	0	7	16	RMARFILB	RMARFILB	FILTERED RMA ROLL OUTPUT (1 OF 2)	ADS	SPU B	S	All	radians		
A	2	23	8	0	7	16	RMARFILB	RMARFILB	FILTERED RMA ROLL OUTPUT (2 OF 2)	ADS	SPU B	S	All	radians		
A	2	52	1	7	7	25	RMAROLA	RMAROLA	RMA ROLL OUTPUT (1 OF 4)	ADS	SPU A	S	Early Orbit	counts		
A	2	53	8	0	7	25	RMAROLA	RMAROLA	RMA ROLL OUTPUT (2 OF 4)	ADS	SPU A	S	Early Orbit	counts		
A	2	54	8	0	7	25	RMAROLA	RMAROLA	RMA ROLL OUTPUT (3 OF 4)	ADS	SPU A	S	Early Orbit	counts		
A	2	55	8	0	7	25	RMAROLA	RMAROLA	RMA ROLL OUTPUT (4 OF 4)	ADS	SPU A	S	Early Orbit	counts		
1	5	52	1	7	7	25	RMAROLA	RMAROLA	RMA ROLL OUTPUT (1 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
1	5	53	8	0	7	25	RMAROLA	RMAROLA	RMA ROLL OUTPUT (2 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
1	5	54	8	0	7	25	RMAROLA	RMAROLA	RMA ROLL OUTPUT (3 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
1	5	55	8	0	7	25	RMAROLA	RMAROLA	RMA ROLL OUTPUT (4 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
A	2	60	1	7	7	25	RMAROLB	RMAROLB	RMA ROLL OUTPUT (1 OF 4)	ADS	SPU B	S	Early Orbit	counts		
A	2	61	8	0	7	25	RMAROLB	RMAROLB	RMA ROLL OUTPUT (2 OF 4)	ADS	SPU B	S	Early Orbit	counts		
A	2	62	8	0	7	25	RMAROLB	RMAROLB	RMA ROLL OUTPUT (3 OF 4)	ADS	SPU B	S	Early Orbit	counts		
A	2	63	8	0	7	25	RMAROLB	RMAROLB	RMA ROLL OUTPUT (4 OF 4)	ADS	SPU B	S	Early Orbit	counts		
1	5	60	1	7	7	25	RMAROLB	RMAROLB	RMA ROLL OUTPUT (1 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
1	5	61	8	0	7	25	RMAROLB	RMAROLB	RMA ROLL OUTPUT (2 OF 4)	ADS	SPU B	S	Normal Thruster	counts		

1	5	62	8	0	7	25	RMAROLB	RMAROLB	RMA ROLL OUTPUT (3 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
1	5	63	8	0	7	25	RMAROLB	RMAROLB	RMA ROLL OUTPUT (4 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
A	3	16	1	2	2	1	RMAY1PWR	RMAY1PWR	RMA YAW 1 28VDC ON/OFF	ADS	RMA	S	All Power-Up		1=On 0=Off	
A	7	64	1	7	7	1	RMAY1RAT	RMAY1RAT	RMA YAW 1 RATE RANGE HI/LO	ADS	RMA	DL	All Power-Up		1=High 0=Low	
4	6	57	8	0	7	8	RMAY1T	RMAY1T	RMA YAW-1 TEMP	ADS	RMA	AP	All Power-Up	Celsius		
A	4	16	1	2	2	1	RMAY2PWR	RMAY2PWR	RMA YAW 2 28VDC ON/OFF	ADS	RMA	S	All Power-Up		1=On 0=Off	
A	8	64	1	7	7	1	RMAY2RAT	RMAY2RAT	RMA YAW 2 RATE RANGE HI/LO	ADS	RMA	DL	All Power-Up		1=High 0=Low	
8	4	57	8	0	7	8	RMAY2T	RMAY2T	RMA YAW-2 TEMP	ADS	RMA	AP	All Power-Up	Celsius		
A	6	52	1	7	7	25	RMAYAWA	RMAYAWA	RMA YAW OUTPUT (1 OF 4)	ADS	SPU A	S	Early Orbit	counts		
A	6	53	8	0	7	25	RMAYAWA	RMAYAWA	RMA YAW OUTPUT (2 OF 4)	ADS	SPU A	S	Early Orbit	counts		
A	6	54	8	0	7	25	RMAYAWA	RMAYAWA	RMA YAW OUTPUT (3 OF 4)	ADS	SPU A	S	Early Orbit	counts		
A	6	55	8	0	7	25	RMAYAWA	RMAYAWA	RMA YAW OUTPUT (4 OF 4)	ADS	SPU A	S	Early Orbit	counts		
3	5	52	1	7	7	25	RMAYAWA	RMAYAWA	RMA YAW OUTPUT (1 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
3	5	53	8	0	7	25	RMAYAWA	RMAYAWA	RMA YAW OUTPUT (2 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
3	5	54	8	0	7	25	RMAYAWA	RMAYAWA	RMA YAW OUTPUT (3 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
3	5	55	8	0	7	25	RMAYAWA	RMAYAWA	RMA YAW OUTPUT (4 OF 4)	ADS	SPU A	S	Normal Thruster	counts		
A	6	60	1	7	7	25	RMAYAWB	RMAYAWB	RMA YAW OUTPUT (1 OF 4)	ADS	SPU B	S	Early Orbit	counts		
A	6	61	8	0	7	25	RMAYAWB	RMAYAWB	RMA YAW OUTPUT (2 OF 4)	ADS	SPU B	S	Early Orbit	counts		
A	6	62	8	0	7	25	RMAYAWB	RMAYAWB	RMA YAW OUTPUT (3 OF 4)	ADS	SPU B	S	Early Orbit	counts		
A	6	63	8	0	7	25	RMAYAWB	RMAYAWB	RMA YAW OUTPUT (4 OF 4)	ADS	SPU B	S	Early Orbit	counts		
3	5	60	1	7	7	25	RMAYAWB	RMAYAWB	RMA YAW OUTPUT (1 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
3	5	61	8	0	7	25	RMAYAWB	RMAYAWB	RMA YAW OUTPUT (2 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
3	5	62	8	0	7	25	RMAYAWB	RMAYAWB	RMA YAW OUTPUT (3 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
3	5	63	8	0	7	25	RMAYAWB	RMAYAWB	RMA YAW OUTPUT (4 OF 4)	ADS	SPU B	S	Normal Thruster	counts		
3	4	55	1	1	1	1	RMAYBIAA	RMAYBIAA	RMA YAW BIAS UPDATE	TT&C	SPU A	S	Normal Thruster		0=Bias Est Not Enabled 1=Bias Est Enabled	ADS Flag Word
3	4	63	1	1	1	1	RMAYBIAB	RMAYBIAB	RMA YAW BIAS UPDATE	TT&C	SPU B	S	Normal Thruster		0=Bias Est Not Enabled 1=Bias Est Enabled	ADS Flag Word
A	4	14	8	0	7	16	RMAYFILA	RMAYFILA	FILTERED RMA YAW OUTPUT (1 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
A	4	15	8	0	7	16	RMAYFILA	RMAYFILA	FILTERED RMA YAW OUTPUT (2 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
A	4	22	8	0	7	16	RMAYFILB	RMAYFILB	FILTERED RMA YAW OUTPUT (1 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
A	4	23	8	0	7	16	RMAYFILB	RMAYFILB	FILTERED RMA YAW OUTPUT (2 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
6	7	54	1	3	3	1	RMAZRTA	RMAZRTA	RMA ZERO RATE	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 54 (upper half-first word)
6	5	52	1	3	3	1	RMAZRTA	RMAZRTA	RMA ZERO RATE	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 52 (upper half-first word)
6	7	62	1	3	3	1	RMAZRTB	RMAZRTB	RMA ZERO RATE	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 62 (upper half-first word)

															0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 60 (upper half-first word)
6	5	60	1	3	3	1	RMAZRTB	RMAZRTB	RMA ZERO RATE	TT&C	SPU B	S	Thruster			
NA	NA	NA	NA	2	NA	1	RMINTER	RMINTER	DISABLE RMI INTERLEAVER	NDS	BDP	S	SSOH			2979
NA	NA	NA	NA	0	NA	1	RMIOUTP	RMIOUTP	DISABLE RMI OUTPUT	NDS	BDP	S	SSOH			2979
NA	NA	NA	NA	1	NA	1	RMISCRAM	RMISCRAM	DISABLE RMI SCRAMBLER	NDS	BDP	S	SSOH			2979
NA	NA	NA	NA	3	NA	1	RMITSTPA	RMITSTPA	RMI TEST PATTERN ENABLE	NDS	BDP	S	SSOH			2979
1	7	52	8	0	7	16	ROLINTNA	ROLINTNA	ROLL ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU A	S	Normal	rad/sec		
1	7	53	8	0	7	16	ROLINTNA	ROLINTNA	ROLL ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU A	S	Normal	rad/sec		
1	7	60	8	0	7	16	ROLINTNB	ROLINTNB	ROLL ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU B	S	Normal	rad/sec		
1	7	61	8	0	7	16	ROLINTNB	ROLINTNB	ROLL ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU B	S	Normal	rad/sec		
NA	NA	NA	NA	1	NA	2	ROLLCNT	ROLLCNT	ROLL COUNT CODE	NDS	BDP	S	SSOH			2968
1	6	54	8	0	7	16	ROLLERRA	ROLLERRA	ROLL ATTITUDE ERROR (1 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
1	6	55	8	0	7	16	ROLLERRA	ROLLERRA	ROLL ATTITUDE ERROR (2 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
1	6	62	8	0	7	16	ROLLERRB	ROLLERRB	ROLL ATTITUDE ERROR (1 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
1	6	63	8	0	7	16	ROLLERRB	ROLLERRB	ROLL ATTITUDE ERROR (2 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
1	7	52	8	0	7	16	ROLLINTA	ROLLINTA	ROLL ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
1	7	53	8	0	7	16	ROLLINTA	ROLLINTA	ROLL ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
1	7	60	8	0	7	16	ROLLINTB	ROLLINTB	ROLL ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU B	S	Thruster	rad/sec		
1	7	61	8	0	7	16	ROLLINTB	ROLLINTB	ROLL ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU B	S	Thruster	rad/sec		
1	8	52	8	0	7	16	ROLLMEA	ROLLMEA	ROLL MOMENTUM ERROR (1 OF 2)	ADS	SPU A	S	Normal Thruster	in-lbf-sec		
1	8	53	8	0	7	16	ROLLMEA	ROLLMEA	ROLL MOMENTUM ERROR (2 OF 2)	ADS	SPU A	S	Normal Thruster	in-lbf-sec		
1	8	60	8	0	7	16	ROLLMEB	ROLLMEB	ROLL MOMENTUM ERROR (1 OF 2)	ADS	SPU B	S	Normal Thruster	in-lbf-sec		
1	8	61	8	0	7	16	ROLLMEB	ROLLMEB	ROLL MOMENTUM ERROR (2 OF 2)	ADS	SPU B	S	Normal Thruster	in-lbf-sec		
NA	NA	NA	NA	2	NA	1	ROLLMSG	ROLLMSG	DISABLE ROLL MSGS	NDS	BDP	S	SSOH			2971
NA	NA	NA	NA	1	NA	1	ROLLPWR	ROLLPWR	ROLL POWER ENABLE	NDS	BDY	S	SSOH			217
1	7	54	8	0	7	16	ROLLRATA	ROLLRATA	ROLL ATTITUDE RATE ERROR (1 OF 2)	ADS	SPU A	S	Normal Thruster	rad/sec		
1	7	55	8	0	7	16	ROLLRATA	ROLLRATA	ROLL ATTITUDE RATE ERROR (2 OF 2)	ADS	SPU A	S	Normal Thruster	rad/sec		
1	7	62	8	0	7	16	ROLLRATB	ROLLRATB	ROLL ATTITUDE RATE ERROR (1 OF 2)	ADS	SPU B	S	Normal Thruster	rad/sec		
1	7	63	8	0	7	16	ROLLRATB	ROLLRATB	ROLL ATTITUDE RATE ERROR (2 OF 2)	ADS	SPU B	S	Normal Thruster	rad/sec		
NA	NA	NA	NA	5	NA	1	ROLLSTST	ROLLSTST	ROLL SYSTEM TEST	NDS	BDY	S	SSOH			217
5	6	24	8	0	7	8	ROLLT	ROLLT	ROLL ACCELEROMETER TEMP	NDS	BDY	S	All Power-Up	Celsius		SSOH Byte 3419
NA	NA	NA	NA	0	NA	16	ROLLTC	ROLLTC	ROLL TRIGGER COUNT	NDS	BDY	S	SSOH			209
NA	NA	NA	NA	3	NA	5	ROLLTL	ROLLTL	ROLL TRIGGER LEVEL	NDS	BDP	S	SSOH			2968
NA	NA	NA	NA	0	NA	1	ROLLTRG	ROLLTRG	ROLL TRIGGER ENABLE	NDS	BDP	S	SSOH			2968
NA	NA	NA	NA	3	NA	1	ROLLTRIG	ROLLTRIG	ROLL TRIGGER ENABLE	NDS	BDY	S	SSOH			217
NA	NA	NA	NA	7	NA	1	RPBASE	RPBASE	RUN PROGFROMBASEADDR	NDS	BDP	S	SSOH			3067
NA	NA	NA	NA	1	NA	1	RPCOIN	RPCOIN	ROLL-PITCH COINCIDEN	NDS	BDP	S	SSOH			2969
NA	NA	NA	NA	5	NA	1	RST03INT	RST03INT	INTR RST 0-3	NDS	BDP-IP	S	SSOH			164
NA	NA	NA	NA	2	NA	1	RST47INT	RST47INT	RST4-7P.FIFOSTIMEADC	NDS	BDP-IP	S	SSOH			164
NA	NA	NA	NA	1	NA	1	RST55INT	RST55INT	RST 5.5 SERIAL COM	NDS	BDP-IP	S	SSOH			164

NA	NA	NA	NA	5	NA	1	RST65ERR	RST65ERR	BDY-P INTERSTATBT:NOSRQ	NDS	BDY	S	SSOH				254
NA	NA	NA	NA	0	NA	1	RST65INT	RST65INT	RST6.5 MFS/FIFO FILL	NDS	BDP-IP	S	SSOH				164
NA	NA	NA	NA	4	NA	1	RST75INT	RST75INT	RST 7.5	NDS	BDP-IP	S	SSOH				164
6	4	54	4	4	7	12	RWA1A	RWA1A	RWA 1 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	counts			LSB=5 rpm
6	4	55	8	0	7	12	RWA1A	RWA1A	RWA 1 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	counts			LSB=5 rpm
6	4	62	4	4	7	12	RWA1B	RWA1B	RWA 1 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	counts			LSB=5 rpm
6	4	63	8	0	7	12	RWA1B	RWA1B	RWA 1 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	counts			LSB=5 rpm
1	5	57	8	0	7	8	RWA1BT	RWA1BT	RWA 1 BEARING TEMP	ADS	RWA	AP	All Power-Up	Celsius			
A	1	52	8	0	7	16	RWA1FILA	RWA1FILA	FILTERED RWA 1 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	rad/sec			
A	1	53	8	0	7	16	RWA1FILA	RWA1FILA	FILTERED RWA 1 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	rad/sec			
8	5	52	8	0	7	16	RWA1FILA	RWA1FILA	FILTERED RWA 1 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Thruster	rad/sec			
8	5	53	8	0	7	16	RWA1FILA	RWA1FILA	FILTERED RWA 1 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Thruster	rad/sec			
A	1	60	8	0	7	16	RWA1FILB	RWA1FILB	FILTERED RWA 1 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	rad/sec			
A	1	61	8	0	7	16	RWA1FILB	RWA1FILB	FILTERED RWA 1 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	rad/sec			
8	5	60	8	0	7	16	RWA1FILB	RWA1FILB	FILTERED RWA 1 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Thruster	rad/sec			
8	5	61	8	0	7	16	RWA1FILB	RWA1FILB	FILTERED RWA 1 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Thruster	rad/sec			
A	5	40	8	0	7	8	RWA1MCUR	RWA1MCUR	RWA 1 MOTOR CURRENT	ADS	RWA	AH	All Power-Up	mA			
7	6	52	8	0	7	9	RWA1TCA	RWA1TCA	RWA TORQUE COMMAND 1 (1 OF 2)	ADS	SPU A	S	Normal	in-lbf			
7	6	53	1	0	0	9	RWA1TCA	RWA1TCA	RWA TORQUE COMMAND 1 (2 OF 2)	ADS	SPU A	S	Normal	in-lbf			
7	6	60	8	0	7	9	RWA1TCB	RWA1TCB	RWA TORQUE COMMAND 1 (1 OF 2)	ADS	SPU B	S	Normal	in-lbf			
7	6	61	8	0	7	9	RWA1TCB	RWA1TCB	RWA TORQUE COMMAND 1 (1 OF 2)	ADS	SPU B	S	Normal	in-lbf			
6	5	52	4	4	7	12	RWA2A	RWA2A	RWA 2 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	counts			LSB=5 rpm
6	5	53	8	0	7	12	RWA2A	RWA2A	RWA 2 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	counts			LSB=5 rpm
6	5	60	4	4	7	12	RWA2B	RWA2B	RWA 2 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	counts			LSB=5 rpm
6	5	61	8	0	7	12	RWA2B	RWA2B	RWA 2 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	counts			LSB=5 rpm
1	6	57	8	0	7	8	RWA2BT	RWA2BT	RWA 2 BEARING TEMP	ADS	RWA	AP	All Power-Up	Celsius			
A	1	54	8	0	7	16	RWA2FILA	RWA2FILA	FILTERED RWA 2 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	rad/sec			
A	1	55	8	0	7	16	RWA2FILA	RWA2FILA	FILTERED RWA 2 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	rad/sec			
8	5	54	8	0	7	16	RWA2FILA	RWA2FILA	FILTERED RWA 2 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Thruster	rad/sec			
8	5	55	8	0	7	16	RWA2FILA	RWA2FILA	FILTERED RWA 2 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Thruster	rad/sec			
A	1	62	8	0	7	16	RWA2FILB	RWA2FILB	FILTERED RWA 2 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	rad/sec			
A	1	63	8	0	7	16	RWA2FILB	RWA2FILB	FILTERED RWA 2 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	rad/sec			
8	5	62	8	0	7	16	RWA2FILB	RWA2FILB	FILTERED RWA 2 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Thruster	rad/sec			
8	5	63	8	0	7	16	RWA2FILB	RWA2FILB	FILTERED RWA 2 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Thruster	rad/sec			
A	6	40	8	0	7	8	RWA2MCUR	RWA2MCUR	RWA 2 MOTOR CURRENT	ADS	RWA	AH	All Power-Up	mA			
7	6	54	8	0	7	9	RWA2TCA	RWA2TCA	RWA TORQUE COMMAND 2 (1 OF 2)	ADS	SPU A	S	Normal	in-lbf			

7	6	55	1	0	0	9	RWA2TCA	RWA2TCA	RWA TORQUE COMMAND 2 (2 OF 2)	ADS	SPU A	S	Normal	in-lbf		
7	6	62	8	0	7	9	RWA2TCB	RWA2TCB	RWA TORQUE COMMAND 2 (1 OF 2)	ADS	SPU B	S	Normal	in-lbf		
7	6	63	1	0	0	9	RWA2TCB	RWA2TCB	RWA TORQUE COMMAND 2 (2 OF 2)	ADS	SPU B	S	Normal	in-lbf		
6	5	54	4	4	7	12	RWA3A	RWA3A	RWA 3 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	counts		LSB=5 rpm
6	5	55	8	0	7	12	RWA3A	RWA3A	RWA 3 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	counts		LSB=5 rpm
6	5	62	4	4	7	12	RWA3B	RWA3B	RWA 3 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	counts		LSB=5 rpm
6	5	63	8	0	7	12	RWA3B	RWA3B	RWA 3 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	counts		LSB=5 rpm
1	7	57	8	0	7	8	RWA3BT	RWA3BT	RWA 3 BEARING TEMP	ADS	RWA	AP	All Power-Up	Celsius		
A	2	52	8	0	7	16	RWA3FILA	RWA3FILA	FILTERED RWA 3 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	rad/sec		
A	2	53	8	0	7	16	RWA3FILA	RWA3FILA	FILTERED RWA 3 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	rad/sec		
8	6	52	8	0	7	16	RWA3FILA	RWA3FILA	FILTERED RWA 3 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
8	6	53	8	0	7	16	RWA3FILA	RWA3FILA	FILTERED RWA 3 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
A	2	60	8	0	7	16	RWA3FILB	RWA3FILB	FILTERED RWA 3 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	rad/sec		
A	2	61	8	0	7	16	RWA3FILB	RWA3FILB	FILTERED RWA 3 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	rad/sec		
8	6	60	8	0	7	16	RWA3FILB	RWA3FILB	FILTERED RWA 3 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Thruster	rad/sec		
8	6	61	8	0	7	16	RWA3FILB	RWA3FILB	FILTERED RWA 3 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Thruster	rad/sec		
A	5	48	8	0	7	8	RWA3MCUR	RWA3MCUR	RWA 3 MOTOR CURRENT	ADS	RWA	AH	All Power-Up	mA		
7	7	52	8	0	7	9	RWA3TCA	RWA3TCA	RWA TORQUE COMMAND 3 (1 OF 2)	ADS	SPU A	S	Normal	in-lbf		
7	7	53	1	0	0	9	RWA3TCA	RWA3TCA	RWA TORQUE COMMAND 3 (2 OF 2)	ADS	SPU A	S	Normal	in-lbf		
7	7	60	8	0	7	9	RWA3TCB	RWA3TCB	RWA TORQUE COMMAND 3 (1 OF 2)	ADS	SPU B	S	Normal	in-lbf		
7	7	61	1	0	0	9	RWA3TCB	RWA3TCB	RWA TORQUE COMMAND 3 (2 OF 2)	ADS	SPU B	S	Normal	in-lbf		
6	6	52	4	4	7	12	RWA4A	RWA4A	RWA 4 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	counts		LSB=5 rpm
6	6	53	8	0	7	12	RWA4A	RWA4A	RWA 4 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	counts		LSB=5 rpm
6	6	60	4	4	7	12	RWA4B	RWA4B	RWA 4 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	counts		LSB=5 rpm
6	6	61	8	0	7	12	RWA4B	RWA4B	RWA 4 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	counts		LSB=5 rpm
1	8	57	8	0	7	8	RWA4BT	RWA4BT	RWA 4 BEARING TEMP	ADS	RWA	AP	All Power-Up	Celsius		
A	2	54	8	0	7	16	RWA4FILA	RWA4FILA	FILTERED RWA 4 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Normal	rad/sec		
A	2	55	8	0	7	16	RWA4FILA	RWA4FILA	FILTERED RWA 4 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Normal	rad/sec		
8	6	54	8	0	7	16	RWA4FILA	RWA4FILA	FILTERED RWA 4 TACH OUTPUT (1 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
8	6	55	8	0	7	16	RWA4FILA	RWA4FILA	FILTERED RWA 4 TACH OUTPUT (2 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
A	2	62	8	0	7	16	RWA4FILB	RWA4FILB	FILTERED RWA 4 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Normal	rad/sec		
A	2	63	8	0	7	16	RWA4FILB	RWA4FILB	FILTERED RWA 4 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Normal	rad/sec		
8	6	62	8	0	7	16	RWA4FILB	RWA4FILB	FILTERED RWA 4 TACH OUTPUT (1 OF 2)	ADS	SPU B	S	Thruster	rad/sec		
8	6	63	8	0	7	16	RWA4FILB	RWA4FILB	FILTERED RWA 4 TACH OUTPUT (2 OF 2)	ADS	SPU B	S	Thruster	rad/sec		

A	6	48	8	0	7	8	RWA4MCUR	RWA4MCUR	RWA 4 MOTOR CURRENT	ADS	RWA	AH	All Power-Up	mA		
7	7	54	8	0	7	9	RWA4TCA	RWA4TCA	RWA TORQUE COMMAND 4 (1 OF 2)	ADS	SPU A	S	Normal	in-lbf		
7	7	55	1	0	0	9	RWA4TCA	RWA4TCA	RWA TORQUE COMMAND 4 (2 OF 2)	ADS	SPU A	S	Normal	in-lbf		
7	7	62	8	0	7	9	RWA4TCB	RWA4TCB	RWA TORQUE COMMAND 4 (1 OF 2)	ADS	SPU B	S	Normal	in-lbf		
7	7	63	1	0	0	9	RWA4TCB	RWA4TCB	RWA TORQUE COMMAND 4 (2 OF 2)	ADS	SPU B	S	Normal	in-lbf		
4	4	52	3	4	6	3	RWADISA	RWADISA	RWA DISABLED INDICATOR	TT&C	SPU A	S	Thruster		0=RWA 1 1=RWA 2 2=RWA 3 3=RWA 4 4=None	Ground Select Flag Word 52 (first word)
5	4	54	3	4	6	3	RWADISA	RWADISA	RWA DISABLED INDICATOR	TT&C	SPU A	S	Normal		0=RWA 1 1=RWA 2 2=RWA 3 3=RWA 4 4=None	Ground Select Flag Word 54 (first word)
5	4	62	3	4	6	3	RWADISB	RWADISB	RWA DISABLED INDICATOR	TT&C	SPU B	S	Normal		0=RWA 1 1=RWA 2 2=RWA 3 3=RWA 4 4=None	Ground Select Flag Word 62 (first word)
4	4	60	3	4	6	3	RWADISB	RWADISB	RWA DISABLED INDICATOR	TT&C	SPU B	S	Thruster		0=RWA 1 1=RWA 2 2=RWA 3 3=RWA 4 4=None	Ground Select Flag Word 60 (first word)
6	8	53	1	1	1	1	RWAENA	RWAENA	REACTION WHEEL ASSEMBLY	TT&C	SPU A	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 53 (lower half-second word)
7	4	55	1	1	1	1	RWAENA	RWAENA	REACTION WHEEL ASSEMBLY	TT&C	SPU A	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 55 (lower half-second word)
6	8	61	1	1	1	1	RWAENB	RWAENB	REACTION WHEEL ASSEMBLY	TT&C	SPU B	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 61 (lower half-second word)
7	4	63	1	1	1	1	RWAENB	RWAENB	REACTION WHEEL ASSEMBLY	TT&C	SPU B	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 63 (lower half-second word)
6	7	54	1	4	4	1	RWAERRA	RWAERRA	RWA RATE ERROR	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 54 (upper half-first word)
6	5	52	1	4	4	1	RWAERRA	RWAERRA	RWA RATE ERROR	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 52 (upper half-first word)
6	7	62	1	4	4	1	RWAERRB	RWAERRB	RWA RATE ERROR	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 62 (upper half-first word)
6	5	60	1	4	4	1	RWAERRB	RWAERRB	RWA RATE ERROR	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 60 (upper half-first word)
A	5	16	1	2	2	1	RWAHTRA	RWAHTRA	RWA HEATER A ON/OFF	ADS	RWA	S	All Power-Up		1=On 0=Off	
A	5	16	1	6	6	1	RWAHTRB	RWAHTRB	RWA HEATER A ON/OFF	ADS	RWA	S	All Power-Up		1=On 0=Off	
3	4	54	1	5	5	1	RWAPWLMA	RWAPWLMA	RWA POWER LIMIT INDICATOR	TT&C	SPU A	S	Normal Thruster		0=RWA Not Power Limited 1=RWA Power Limited	ADS Flag Word
3	4	62	1	5	5	1	RWAPWLMB	RWAPWLMB	RWA POWER LIMIT INDICATOR	TT&C	SPU B	S	Normal Thruster		0=RWA Not Power Limited 1=RWA Power Limited	ADS Flag Word
3	4	54	1	7	7	1	RWASPLMA	RWASPLMA	RWA SPEED LIMIT INDICATOR	TT&C	SPU A	S	Normal Thruster		0=RWA Not Speed Limited 1=RWA Speed Limited	ADS Flag Word
3	4	62	1	7	7	1	RWASPLMB	RWASPLMB	RWA SPEED LIMIT INDICATOR	TT&C	SPU B	S	Normal Thruster		0=RWA Not Speed Limited 1=RWA Speed Limited	ADS Flag Word
3	4	54	1	6	6	1	RWATQLMA	RWATQLMA	RWA TORQUE LIMIT INDICATOR	TT&C	SPU A	S	Normal Thruster		0=RWA Not Torque Limited 1=RWA Torque Limited	ADS Flag Word

3	4	62	1	6	6	1	RWATQLMB	RWATQLMB	RWA TORQUE LIMIT INDICATOR	TT&C	SPU B	S	Normal Thruster		0=RWA Not Torque Limited 1=RWA Torque Limited	ADS Flag Word
A	5	31	8	0	7	8	RWE1CV5V	RWE1CV5V	RWE 1 DC-DC CONV +5VDC OUT	ADS	RWE	AH	All Power-Up	volts		
8	2	58	8	0	7	8	RWE1T	RWE1T	RWE 1 TEMP	ADS	RWE	AP	All Power-Up	Celsius		
A	8	48	8	0	7	8	RWE2CV5V	RWE2CV5V	RWE 2 DC-DC CONV +5VDC OUT	ADS	RWE	AH	All Power-Up	volts		
6	6	57	8	0	7	8	RWE2T	RWE2T	RWE 2 TEMP	ADS	RWE	AP	All Power-Up	Celsius		
A	8	29	8	0	7	8	RWE3CV5V	RWE3CV5V	RWE 3 DC-DC CONV +5VDC OUT	ADS	RWE	AH	All Power-Up	volts		
7	4	58	8	0	7	8	RWE3T	RWE3T	RWE 3 TEMP	ADS	RWE	AP	All Power-Up	Celsius		
A	8	30	8	0	7	8	RWE4CV5V	RWE4CV5V	RWE 4 DC-DC CONV +5VDC OUT	ADS	RWE	AH	All Power-Up	volts		
8	5	57	8	0	7	8	RWE4T	RWE4T	RWE 4 TEMP	ADS	RWE	AP	All Power-Up	Celsius		
2	4	56	8	0	7	8	RYCCUR	RYCCUR	RYC COIL CURRENT	ADS	MTC	AH	All Power-Up	mA		
A	1	16	1	1	1	1	RYCFWD	RYCFWD	RYC FORWARD COIL ENABLE	ADS	MTC	S	All Power-Up		1=Enabled 0=Disabled	
A	3	64	1	3	3	1	RYCFWDA	RYCFWDA	SPU A RYC FWD ON	ADS	MTC	DL	All Power-Up		1=Off 0=On	
A	4	64	1	3	3	1	RYCFWDB	RYCFWDB	SPU B RYC FWD ON	ADS	MTC	DL	All Power-Up		1=Off 0=On	
A	2	16	1	1	1	1	RYCREV	RYCREV	RYC REVERSE COIL ENABLED	ADS	MTC	S	All Power-Up		1=Enabled 0=Disabled	
A	3	64	1	4	4	1	RYCREVA	RYCREVA	SPU A RYC REV ON	ADS	MTC	DL	All Power-Up		1=Off 0=On	
A	4	64	1	4	4	1	RYCREVB	RYCREVB	SPU B RYC REV ON	ADS	MTC	DL	All Power-Up		1=Off 0=On	
A	4	64	1	7	7	1	RYCSPPOL	RYCSPPOL	RYC SPR POLARITY	ADS	MTC	DL	All Power-Up		1=Forward 0=Reverse	
A	3	16	1	1	1	1	RYCSPR	RYCSPR	RYC SPR COIL ENABLED	ADS	MTC	S	All Power-Up		1=Enabled 0=Disabled	
A	3	64	1	5	5	1	RYCSPRA	RYCSPRA	SPU A RYC SPR ON	ADS	MTC	DL	All Power-Up		1=Off 0=On	
A	4	64	1	5	5	1	RYCSPRB	RYCSPRB	SPU B RYC SPR ON	ADS	MTC	DL	All Power-Up		1=Off 0=On	
NA	NA	NA	NA	2	NA	1	RYSLCOIN	RYSLCOIN	ROLL-SLOW COINCIDENC	NDS	BDP	S	SSOH			2969
A	1	14	3	5	7	3	SA+CMDA	SAPCMDA	+Y S/A STEP STATUS	TT&C	SPU A	S	All		2=+Y Fwd 3=+Y Rev 0-1,4-7=Spare	S/A Step Status Word
A	1	22	3	5	7	3	SA+CMDB	SA+CMDB	+Y S/A STEP STATUS	TT&C	SPU B	S	All		2=+Y Fwd 3=+Y Rev 0-1,4-7=Spare	S/A Step Status Word
A	1	15	3	5	7	3	SA-CMDA	SAMCMDA	-Y S/A STEP STATUS	TT&C	SPU A	S	All		4=-Y Fwd 5=-Y Rev 0-3,6-7=Spare	S/A Step Status Word
A	1	23	3	5	7	3	SA-CMDB	SAMCMDB	+Y S/A STEP STATUS	TT&C	SPU B	S	All		4=-Y Fwd 5=-Y Rev 0-3,6-7=Spare	S/A Step Status Word
A	4	10	1	5	5	1	SAARMA	SAARMA	OCU A PYROS (S/A) ARMED	EPS	S/A	DL	All Power-Up		1=Armed 0=Disarmed	
A	4	11	1	5	5	1	SAARMB	SAARMB	OCU B PYROS (S/A) ARMED	EPS	S/A	DL	All Power-Up		1=Armed 0=Disarmed	
A	3	10	1	3	3	1	SADA	SADA	SAD A ON/ B OFF	EPS	SAD	DL	All Power-Up		1=Off 0=On	
A	3	11	1	3	3	1	SADB	SADB	SAD B ON/ A OFF	EPS	SAD	DL	All Power-Up		1=Off 0=On	
6	7	55	1	2	2	1	SADDBNDA	SADDBNDA	SADPOT DEADBAND	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 55 (upper half-second word)
6	5	53	1	2	2	1	SADDBNDA	SADDBNDA	SADPOT DEADBAND	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 53 (upper half-second word)
6	7	63	1	2	2	1	SADDBNDB	SADDBNDB	SADPOT DEADBAND	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 63 (upper half-second word)
6	5	61	1	2	2	1	SADDBNDB	SADDBNDB	SADPOT DEADBAND	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 61 (upper half-second word)

A	3	10	1	2	2	1	SADIRCTA	SADIRCTA	SAD A STEP DIRECTION FWD/REV	EPS	SAD	DL	All Power-Up		1=Forward 0=Reverse	
A	3	11	1	2	2	1	SADIRCTB	SADIRCTB	SAD B STEP DIRECTION FWD/REV	EPS	SAD	DL	All Power-Up		1=Forward 0=Reverse	
6	7	55	1	1	1	1	SADRSETA	SADRSETA	SADPOT POSITION RESET	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 55 (upper half-second word)
6	5	53	1	1	1	1	SADRSETA	SADRSETA	SADPOT POSITION RESET	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 53 (upper half-second word)
6	7	63	1	1	1	1	SADRSETB	SADRSETB	SADPOT POSITION RESET	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 63 (upper half-second word)
6	5	61	1	1	1	1	SADRSETB	SADRSETB	SADPOT POSITION RESET	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 61 (upper half-second word)
4	4	52	1	0	0	1	SASLWENA	SASLWENA	SKP SNP SOLAR ARRAY SLEW ENA/DIS	TT&C	SPU A	S	Thruster		0=S/A Slew During SK if Prev SNP Disabled 1=S/A Slew During SK if Prev SNP Enabled	Ground Select Flag Word 52 (first word)
5	4	54	1	0	0	1	SASLWENA	SASLWENA	SKP SNP SOLAR ARRAY SLEW ENA/DIS	TT&C	SPU A	S	Normal		0=S/A Slew During SK if Prev SNP Disabled 1=S/A Slew During SK if Prev SNP Enabled	Ground Select Flag Word 54 (first word)
5	4	62	1	0	0	1	SASLWENB	SASLWENB	SKP SNP SOLAR ARRAY SLEW ENA/DIS	TT&C	SPU B	S	Normal		0=S/A Slew During SK if Prev SNP Disabled 1=S/A Slew During SK if Prev SNP Enabled	Ground Select Flag Word 62 (first word)
4	4	60	1	0	0	1	SASLWENB	SASLWENB	SKP SNP SOLAR ARRAY SLEW ENA/DIS	TT&C	SPU B	S	Thruster		0=S/A Slew During SK if Prev SNP Disabled 1=S/A Slew During SK if Prev SNP Enabled	Ground Select Flag Word 60 (first word)
5	8	58	8	0	7	8	SBANTT	SBANTT	BASE PNL S-BAND ANT TEMP D	MSS	TCS	AP	All Power-Up	Celsius		
NA	NA	NA	NA	0	NA	8	SBDPT	SBDPT	BDP TEMPERATURE	NDS	BDP	S	SSOH			395
NA	NA	NA	NA	0	NA	8	SBDWT	SBDWT	BDW TEMP SENSOR #5	NDS	BDW	S	SSOH			441
NA	NA	NA	NA	0	NA	8	SBDXC	SBDXC	BDX/D CURRENT	NDS	BDP	S	SSOH			397
NA	NA	NA	NA	0	NA	8	SBDXSC1	SBDXSC1	BDX S1 SINGLES COUNT	NDS	BDD/X	S	SSOH			418
NA	NA	NA	NA	0	NA	8	SBDXSC2	SBDXSC2	BDX S2 SINGLES COUNT	NDS	BDD/X	S	SSOH			419
NA	NA	NA	NA	0	NA	8	SBDXSC3	SBDXSC3	BDX S3 SINGLES COUNT	NDS	BDD/X	S	SSOH			420
NA	NA	NA	NA	0	NA	8	SBDXSC4	SBDXSC4	BDX S4 SINGLES COUNT	NDS	BDD/X	S	SSOH			421
NA	NA	NA	NA	0	NA	8	SBDXT	SBDXT	BDX TEMPERATURE 2	NDS	BDD/X	S	SSOH			416
NA	NA	NA	NA	0	NA	8	SBDXTC	SBDXTC	BDX TRIGGER COUNT	NDS	BDD/X	S	SSOH			417
NA	NA	NA	NA	0	NA	8	SBDYC	SBDYC	BDP CURRENT	NDS	BDP	S	SSOH			396
NA	NA	NA	NA	0	NA	8	SBDYT	SBDYT	OPTICAL DETECTORTEMP	NDS	BDY	S	SSOH			407
NA	NA	NA	NA	6	NA	1	SBFRMUPD	SBFRMUPD	SUB FRAME UPDATE	NDS	BDP-IP	S	SSOH			146
NA	NA	NA	NA	0	NA	16	SBHDZWDS	SBHDZWDS	ZTIME	NDS	BDP	S	SSOH			385
6	8	53	8	0	7	8	SBITERRA	SBITERRA	SINGLE BIT ERROR ROLLOVER COUNTER	TT&C	SPU A	S	Early Orbit		Binary equivalent of values 0-255	TLM (Error) Flag Word 53 (second word)
3	6	53	8	0	7	8	SBITERRA	SBITERRA	SINGLE BIT ERROR ROLLOVER COUNTER	TT&C	SPU A	S	Normal Thruster		Binary equivalent of values 0-255	TLM (Error) Flag Word 53 (second word)
6	8	61	8	0	7	8	SBITERRB	SBITERRB	SINGLE BIT ERROR ROLLOVER COUNTER	TT&C	SPU B	S	Early Orbit		Binary equivalent of values 0-255	TLM (Error) Flag Word 61 (second word)
3	6	61	8	0	7	8	SBITERRB	SBITERRB	SINGLE BIT ERROR ROLLOVER COUNTER	TT&C	SPU B	S	Normal Thruster		Binary equivalent of values 0-255	TLM (Error) Flag Word 61 (second word)
NA	NA	NA	NA	0	NA	16	SDMPOP	SDMPOP	S-BAND DMP O/P POINT	NDS	BDP-MP	S	SSOH			99
NA	NA	NA	NA	0	NA	8	SDUMPADR	SDUMPADR	S-BAND DUMP ADDRESS	NDS	BDP	S	SSOH			2995
NA	NA	NA	NA	0	NA	16	SDUMPP	SDUMPP	S-BAND DUMP POINTER	NDS	BDP-IP	S	SSOH			197
4	4	24	8	0	7	8	SEGIBV	SEGIBV	SEGMENT I BIAS VOLTAGE	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3409
4	6	24	8	0	7	8	SEGIFB	SEGIFB	SEGMENT I FEEDBACK	NDS	BDY	S	All Power-Up	mA		SSOH Byte 3411
NA	NA	NA	NA	3	NA	1	SEGIPWR	SEGIPWR	SEGMENT I POWER	NDS	BDY	S	SSOH			7
4	5	24	8	0	7	8	SEGJBV	SEGJBV	SEGMENT J BIAS VOLTAGE	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3410

4	7	24	8	0	7	8	SEGJFB	SEGJFB	SEGMENT J FEEDBACK	NDS	BDY	S	All Power-Up	mA		SSOH Byte 3412
NA	NA	NA	NA	4	NA	1	SEGJPWR	SEGJPWR	SEGMENT J POWER	NDS	BDY	S	SSOH			7
NA	NA	NA	NA	0	NA	1	SEGMENTI	SEGMENTI	DISABLE I SEGMENTPWR	NDS	BDY	S	SSOH			2963
NA	NA	NA	NA	0	NA	1	SEGMENTJ	SEGMENTJ	J SEGMENT PWRDISABLE	NDS	BDY	S	SSOH			2965
3	4	55	1	6	6	1	SEPSIDAA	SEPSIDAA	SEPARATION SIDE A FLAG	TT&C	SPU A	S	Normal Thruster		0=Not Separated 1=Separated	ADS Flag Word
3	4	63	1	6	6	1	SEPSIDAB	SEPSIDAB	SEPARATION SIDE A FLAG	TT&C	SPU B	S	Normal Thruster		0=Not Separated 1=Separated	ADS Flag Word
3	4	55	1	7	7	1	SEPSIDBA	SEPSIDBA	SEPARATION SIDE B FLAG	TT&C	SPU A	S	Normal Thruster		0=Not Separated 1=Separated	ADS Flag Word
3	4	63	1	7	7	1	SEPSIDBB	SEPSIDBB	SEPARATION SIDE B FLAG	TT&C	SPU B	S	Normal Thruster		0=Not Separated 1=Separated	ADS Flag Word
NA	NA	NA	NA	3	NA	1	SEQCK	SEQCK	PROPER SEQ CHECK ON	NDS	BDP	S	SSOH			3051
NA	NA	NA	NA	1	NA	1	SFTASCSM	SFTASCSM	SOFTASTIC CMDERREPORT	NDS	BDP	S	SSOH			3063
NA	NA	NA	NA	3	NA	1	SFTEESM	SFTEESM	SOFTEEPROMFAILREPORT	NDS	BDP	S	SSOH			3062
NA	NA	NA	NA	1	NA	1	SFTMEMSM	SFTMEMSM	SOFT MEM ERR REPORTS	NDS	BDP	S	SSOH			3062
NA	NA	NA	NA	0	NA	8	SGDARPWR	SGDARPWR	RF (ARIES) POWER	NDS	GDR	S	SSOH			447
NA	NA	NA	NA	0	NA	8	SGDCRPWR	SGDCRPWR	RF COM RELAY (CR) POWER	NDS	GDR	S	SSOH			445
NA	NA	NA	NA	0	NA	8	SGDHPAAT	SGDHPAAT	RF HIGH PWR AMP A TEMP	NDS	GDR	S	SSOH			442
NA	NA	NA	NA	0	NA	8	SGDHPABT	SGDHPABT	RF HIGH PWR AMP B TEMP	NDS	GDR	S	SSOH			443
NA	NA	NA	NA	0	NA	8	SGDNDPWR	SGDNDPWR	RF NDT MON (NDM) POWER	NDS	GDR	S	SSOH			446
NA	NA	NA	NA	0	NA	8	SGDTXPWR	SGDTXPWR	RF C-BAND XMITTER POWER	NDS	GDR	S	SSOH			444
NA	NA	NA	NA	0	NA	16	SHBFTC	SHBFTC	FLTRGCT-HIBNDCH1,2,3	NDS	BDW	S	SSOH			437
NA	NA	NA	NA	0	NA	16	SHBHCFAC	SHBHCFAC	FALALARMCNTHIBANDCH1	NDS	BDW	S	SSOH			427
NA	NA	NA	NA	0	NA	8	SHBHCN	SHBHCN	AVGNOISEVALHIBANDCH1	NDS	BDW	S	SSOH			422
NA	NA	NA	NA	0	NA	16	SHBLCFAC	SHBLCFAC	FALALARMCNTHIBANDCH3	NDS	BDW	S	SSOH			431
NA	NA	NA	NA	0	NA	8	SHBLCN	SHBLCN	AVGNOISEVALHIBANDCH3	NDS	BDW	S	SSOH			424
NA	NA	NA	NA	0	NA	16	SHBMCFAC	SHBMCFAC	FALALARMCNTHIBANDCH2	NDS	BDW	S	SSOH			429
NA	NA	NA	NA	0	NA	8	SHBMCN	SHBMCN	AVGNOISEVALHIBANDCH2	NDS	BDW	S	SSOH			423
A	1	34	8	0	7	8	SHDV1T1	SHDV1T1	SHUNT DRIVE VOLTAGE #1 (T1)	EPS	PRU	AH	All Power-Up	volts		
A	5	34	8	0	7	8	SHDV1T2	SHDV1T2	SHUNT DRIVE VOLTAGE #1 (T2)	EPS	PRU	AH	All Power-Up	volts		
A	4	35	8	0	7	8	SHDV2T1	SHDV2T1	SHUNT DRIVE VOLTAGE #2 (T1)	EPS	PRU	AH	All Power-Up	volts		
A	8	40	8	0	7	8	SHDV2T2	SHDV2T2	SHUNT DRIVE VOLTAGE #2 (T2)	EPS	PRU	AH	All Power-Up	volts		
NA	NA	NA	NA	3	NA	1	SHXFRMSG	SHXFRMSG	XFER MSG FLAG MPSOH	NDS	BDP-MP	S	SSOH			46
A	7	64	1	2	2	1	SIGPRE1	SIGPRE1	S-BAND RCVR 1 SIGNAL PRESENT	TT&C	SBT	DL	All Power-Up		0=No Signal 1=Signal Present	
A	8	64	1	2	2	1	SIGPRE2	SIGPRE2	S-BAND RCVR 2 SIGNAL PRESENT	TT&C	SBT	DL	All Power-Up		0=No Signal 1=Signal Present	
3	4	55	1	3	3	1	SKABRTA	SKABRTA	STATIONKEEPING ABORT INDICATOR	TT&C	SPU A	S	Normal Thruster		0=Do Not Abort SK 1=Abort SK	ADS Flag Word
3	4	63	1	3	3	1	SKABRTB	SKABRTB	STATIONKEEPING ABORT INDICATOR	TT&C	SPU B	S	Normal Thruster		0=Do Not Abort SK 1=Abort SK	ADS Flag Word
NA	NA	NA	NA	0	NA	16	SLBFTC	SLBFTC	FALTRGCNT-LOBNDCH1,2	NDS	BDW	S	SSOH			439
NA	NA	NA	NA	0	NA	16	SLBHCFAC	SLBHCFAC	FALALARMCNTLOBANDCH1	NDS	BDW	S	SSOH			433
NA	NA	NA	NA	0	NA	8	SLBHCN	SLBHCN	AVGNOISEVALLOBANDCH1	NDS	BDW	S	SSOH			425
NA	NA	NA	NA	0	NA	16	SLBMCFAC	SLBMCFAC	FALALARMCNTLOBANDCH2	NDS	BDW	S	SSOH			435
NA	NA	NA	NA	0	NA	8	SLBMCN	SLBMCN	AVGNOISEVALLOBANDCH2	NDS	BDW	S	SSOH			426
NA	NA	NA	NA	1	NA	7	SLOPEH	SLOPEH	SLOPE (7 MSB)	NDS	BDP	S	SSOH			2956
NA	NA	NA	NA	0	NA	8	SLOPEL	SLOPEL	SLOPE (8 LSB)	NDS	BDP	S	SSOH			2957
NA	NA	NA	NA	0	NA	1	SLOPESGN	SLOPESGN	SLOPE SIGN	NDS	BDP	S	SSOH			2956
NA	NA	NA	NA	0	NA	8	SMSGRERR	SMSGRERR	MP&SENSOR MSGRECERRCNT	NDS	BDP	S	SSOH			398
NA	NA	NA	NA	6	NA	2	SOAMODE	SOAMODE	SOLAR INHIBIT CNTRL	NDS	BDP	S	SSOH			2945
NA	NA	NA	NA	0	NA	8	SOAUMOFS	SOAUMOFS	UMBRA OFFSET	NDS	BDP	S	SSOH			2962
NA	NA	NA	NA	4	NA	2	SOAYSCMP	SOAYSCMP	SOLAR YSLOW FB COMPRATE	NDS	BDP	S	SSOH			2945
NA	NA	NA	NA	0	NA	8	SOLDAY	SOLDAY	SOL_DAY	NDS	BDY	S	SSOH			224
NA	NA	NA	NA	0	NA	8	SOLDSPAN	SOLDSPAN	SOL_DSPAN	NDS	BDY	S	SSOH			223
NA	NA	NA	NA	0	NA	8	SOLENC	SOLENC	SOL_EN_CNT	NDS	BDY	S	SSOH			248

NA	NA	NA	NA	0	NA	8	SOLETH	SOLETH	SOLARINHENDTIME-8MSB	NDS	BDP	S	SSOH			2949
NA	NA	NA	NA	0	NA	8	SOLETL	SOLETL	SOLAR INH END TIME-LSB	NDS	BDP	S	SSOH			2951
NA	NA	NA	NA	0	NA	8	SOLETM	SOLETM	SOLARINHENDTIME-8MIDSB	NDS	BDP	S	SSOH			2950
NA	NA	NA	NA	0	NA	8	SOLINCA	SOLINCA	SOL_INHCNT_A	NDS	BDY	S	SSOH			246
NA	NA	NA	NA	0	NA	8	SOLINCB	SOLINCB	SOL_INHCNT_B	NDS	BDY	S	SSOH			247
NA	NA	NA	NA	1	NA	1	SOLINHIB	SOLINHIB	SOLAR INHIBIT DISABLE	NDS	BDY	S	SSOH			216
NA	NA	NA	NA	0	NA	16	SOLINHST	SOLINHST	SOL_INHIB_ST	NDS	BDY	S	SSOH			241
NA	NA	NA	NA	0	NA	1	SOLINPER	SOLINPER	SOLAR INHIBIT PERIOD	NDS	BDY	S	SSOH			216
NA	NA	NA	NA	0	NA	32	SOLPEN2	SOLPEN2	SOL_RSRS=PENUMBRA^2	NDS	BDY	S	SSOH			229
NA	NA	NA	NA	0	NA	8	SOLSPAN	SOLSPAN	SOL_SPAN	NDS	BDY	S	SSOH			222
NA	NA	NA	NA	0	NA	8	SOLSTH	SOLSTH	SOLARINHSTRTTIM-8MSB	NDS	BDP	S	SSOH			2946
NA	NA	NA	NA	0	NA	8	SOLSTL	SOLSTL	SOLARINHSTRTTIM-8LSB	NDS	BDP	S	SSOH			2948
NA	NA	NA	NA	0	NA	8	SOLSTM	SOLSTM	SOLARINHSTRTTIM-8MIDSB	NDS	BDP	S	SSOH			2947
NA	NA	NA	NA	0	NA	32	SOLUMB2	SOLUMB2	SOL_RERE=UMBRA^2	NDS	BDY	S	SSOH			225
NA	NA	NA	NA	0	NA	16	SOLX1	SOLX1	SOL_X1	NDS	BDY	S	SSOH			233
NA	NA	NA	NA	0	NA	32	SOLX1X1	SOLX1X1	SOL_X1X1	NDS	BDY	S	SSOH			235
NA	NA	NA	NA	0	NA	16	SOLY1	SOLY1	SOL_Y1	NDS	BDY	S	SSOH			239
1	1	28	8	0	7	8	SP00AHDW	SP00AHDW	SPARE 00 AH DWELL REGION	TT&C	PCE	AH	All Power-Up			
8	4	27	8	0	7	8	SP00AHND	SP00AHND	SPARE 00 AH NON-DWELL REGION	TT&C	PCE	AH	All Power-Up			
4	2	28	8	0	7	8	SP00APDW	SP00APDW	SPARE 00 AP DWELL REGION	TT&C	PCE	AP	All Power-Up			
2	2	27	8	0	7	8	SP00APND	SP00APND	SPARE 00 AP NON-DWELL REGION	TT&C	PCE	AP	All Power-Up			
A	1	31	1	0	0	1	SP00DLDW	SP00DLDW	SPARE 00 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	10	1	0	0	1	SP00DLND	SP00DLND	SPARE 00 DL NON-DWELL REGION	TT&C	TIU	DL	All			
1	2	28	8	0	7	8	SP01AHDW	SP01AHDW	SPARE 01 AH DWELL REGION	TT&C	PCE	AH	All Power-Up			
8	5	27	8	0	7	8	SP01AHND	SP01AHND	SPARE 01 AH NON-DWELL REGION	TT&C	PCE	AH	All Power-Up			
3	6	28	8	0	7	8	SP01APDW	SP01APDW	SPARE 01 AP DWELL REGION	TT&C	PCE	AP	All Power-Up			
1	6	27	8	0	7	8	SP01APND	SP01APND	SPARE 01 AP NON-DWELL REGION	TT&C	PCE	AP	All Power-Up			
A	1	31	1	1	1	1	SP01DLDW	SP01DLDW	SPARE 01 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	10	1	1	1	1	SP01DLND	SP01DLND	SPARE 01 DL NON-DWELL REGION	TT&C	TIU	DL	All			
1	3	28	8	0	7	8	SP02AHDW	SP02AHDW	SPARE 02 AH DWELL REGION	TT&C	PCE	AH	All Power-Up			
8	6	27	8	0	7	8	SP02AHND	SP02AHND	SPARE 02 AH NON-DWELL REGION	TT&C	PCE	AH	All Power-Up			
3	7	28	8	0	7	8	SP02APDW	SP02APDW	SPARE 02 AP DWELL REGION	TT&C	PCE	AP	All Power-Up			
1	7	27	8	0	7	8	SP02APND	SP02APND	SPARE 02 AP NON-DWELL REGION	TT&C	PCE	AP	All Power-Up			
A	1	31	1	2	2	1	SP02DLDW	SP02DLDW	SPARE 02 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	10	1	2	2	1	SP02DLND	SP02DLND	SPARE 02 DL NON-DWELL REGION	TT&C	TIU	DL	All			
1	4	28	8	0	7	8	SP03AHDW	SP03AHDW	SPARE 03 AH DWELL REGION	TT&C	PCE	AH	All Power-Up			
8	7	27	8	0	7	8	SP03AHND	SP03AHND	SPARE 03 AH NON-DWELL REGION	TT&C	PCE	AH	All Power-Up			
3	8	28	8	0	7	8	SP03APDW	SP03APDW	SPARE 03 AP DWELL REGION	TT&C	PCE	AP	All Power-Up			
1	8	27	8	0	7	8	SP03APND	SP03APND	SPARE 03 AP NON-DWELL REGION	TT&C	PCE	AP	All Power-Up			
A	1	31	1	3	3	1	SP03DLDW	SP03DLDW	SPARE 03 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	10	1	3	3	1	SP03DLND	SP03DLND	SPARE 03 DL NON-DWELL REGION	TT&C	TIU	DL	All			
1	5	28	8	0	7	8	SP04AHDW	SP04AHDW	SPARE 04 AH DWELL REGION	TT&C	PCE	AH	All Power-Up			
8	8	27	8	0	7	8	SP04AHND	SP04AHND	SPARE 04 AH NON-DWELL REGION	TT&C	PCE	AH	All Power-Up			
4	1	28	8	0	7	8	SP04APDW	SP04APDW	SPARE 04 AP DWELL REGION	TT&C	PCE	AP	All Power-Up			
2	1	27	8	0	7	8	SP04APND	SP04APND	SPARE 04 AP NON-DWELL REGION	TT&C	PCE	AP	All Power-Up			
A	1	31	1	4	4	1	SP04DLDW	SP04DLDW	SPARE 04 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	10	1	4	4	1	SP04DLND	SP04DLND	SPARE 04 DL NON-DWELL REGION	TT&C	TIU	DL	All			
A	4	31	8	0	7	8	SP05AHDW	SP05AHDW	SPARE 05 AH DWELL REGION	TT&C	TIU	AH	All Power-Up			
7	3	56	8	0	7	8	SP05AHND	SP05AHND	SPARE 05 AH NON-DWELL REGION	TT&C	TIU	AH	All Power-Up			
3	2	57	8	0	7	8	SP05APND	SP05APND	SPARE 05 AP NON-DWELL REGION	TT&C	TIU	AP	All Power-Up			
A	2	31	1	0	0	1	SP05DLDW	SP05DLDW	SPARE 05 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	11	1	0	0	1	SP05DLND	SP05DLND	SPARE 05 DL NON-DWELL REGION	TT&C	TIU	DL	All			
A	6	31	8	0	7	8	SP06AHDW	SP06AHDW	SPARE 06 AH DWELL REGION	TT&C	TIU	AH	All Power-Up			
8	5	56	8	0	7	8	SP06AHND	SP06AHND	SPARE 06 AH NON-DWELL REGION	TT&C	TIU	AH	All Power-Up			
3	3	57	8	0	7	8	SP06APND	SP06APND	SPARE 06 AP NON-DWELL REGION	TT&C	TIU	AP	All Power-Up			
A	2	31	1	1	1	1	SP06DLDW	SP06DLDW	SPARE 06 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	11	1	1	1	1	SP06DLND	SP06DLND	SPARE 06 DL NON-DWELL REGION	TT&C	TIU	DL	All			

A	7	31	8	0	7	8	SP07AHDW	SP07AHDW	SPARE 07 AH DWELL REGION	TT&C	TIU	AH	All Power-Up			
4	1	56	8	0	7	8	SP07AHND	SP07AHND	SPARE 07 AH NON-DWELL REGION	TT&C	TIU	AH	All Power-Up			
3	4	57	8	0	7	8	SP07APND	SP07APND	SPARE 07 AP NON-DWELL REGION	TT&C	TIU	AP	All Power-Up			
A	2	31	1	2	2	1	SP07DLDW	SP07DLDW	SPARE 07 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	11	1	2	2	1	SP07DLND	SP07DLND	SPARE 07 DL NON-DWELL REGION	TT&C	TIU	DL	All			
A	8	31	8	0	7	8	SP08AHDW	SP08AHDW	SPARE 08 AH DWELL REGION	TT&C	TIU	AH	All Power-Up			
8	1	56	8	0	7	8	SP08AHND	SP08AHND	SPARE 08 AH NON-DWELL REGION	TT&C	TIU	AH	All Power-Up			
3	5	57	8	0	7	8	SP08APND	SP08APND	SPARE 08 AP NON-DWELL REGION	TT&C	TIU	AP	All Power-Up			
A	2	31	1	3	3	1	SP08DLDW	SP08DLDW	SPARE 08 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	11	1	3	3	1	SP08DLND	SP08DLND	SPARE 08 DL NON-DWELL REGION	TT&C	TIU	DL	All			
A	1	30	8	0	7	8	SP09AHDW	SP09AHDW	SPARE 09 AH DWELL REGION	TT&C	TIU	AH	All Power-Up			
A	2	32	8	0	7	8	SP09AHND	SP09AHND	SPARE 09 AH NON-DWELL REGION	TT&C	TIU	AH	All Power-Up			
3	6	57	8	0	7	8	SP09APND	SP09APND	SPARE 09 AP NON-DWELL REGION	TT&C	TIU	AP	All Power-Up			
A	2	31	1	4	4	1	SP09DLDW	SP09DLDW	SPARE 09 DL DWELL REGION	TT&C	TIU	DL	All			
A	8	11	1	4	4	1	SP09DLND	SP09DLND	SPARE 09 DL NON-DWELL REGION	TT&C	TIU	DL	All			
A	2	41	1	0	0	1	SP10DLND	SP10DLND	SPARE 10 DL NON-DWELL REGION	TT&C	PCE	DL	All			
A	2	41	1	1	1	1	SP11DLND	SP11DLND	SPARE 11 DL NON-DWELL REGION	TT&C	PCE	DL	All			
A	2	41	1	2	2	1	SP12DLND	SP12DLND	SPARE 12 DL NON-DWELL REGION	TT&C	PCE	DL	All			
A	2	41	1	3	3	1	SP13DLND	SP13DLND	SPARE 13 DL NON-DWELL REGION	TT&C	PCE	DL	All			
A	2	41	1	4	4	1	SP14DLND	SP14DLND	SPARE 14 DL NON-DWELL REGION	TT&C	PCE	DL	All			
A	2	42	1	0	0	1	SP15DLND	SP15DLND	SPARE 15 DL NON-DWELL REGION	TT&C	PCE	DL	All			
A	2	42	1	1	1	1	SP16DLND	SP16DLND	SPARE 16 DL NON-DWELL REGION	TT&C	PCE	DL	All			
A	2	42	1	2	2	1	SP17DLND	SP17DLND	SPARE 17 DL NON-DWELL REGION	TT&C	PCE	DL	All			
A	2	42	1	3	3	1	SP18DLND	SP18DLND	SPARE 18 DL NON-DWELL REGION	TT&C	PCE	DL	All			
A	2	42	1	4	4	1	SP19DLND	SP19DLND	SPARE 19 DL NON-DWELL REGION	TT&C	PCE	DL	All			
1	8	52	8	0	7	32	SPINPERA	SPINPERA	SPM SPIN PERIOD (1 OF 4)	ADS	SPU A	S	Early Orbit	seconds		Should be AF: 16-bit fixed w/scale factor
1	8	53	8	0	7	32	SPINPERA	SPINPERA	SPM SPIN PERIOD (2 OF 4)	ADS	SPU A	S	Early Orbit	seconds		Should be AF: 16-bit fixed w/scale factor
1	8	54	8	0	7	32	SPINPERA	SPINPERA	SPM SPIN PERIOD (3 OF 4)	ADS	SPU A	S	Early Orbit	seconds		Should be AF: 16-bit fixed w/scale factor
1	8	55	8	0	7	32	SPINPERA	SPINPERA	SPM SPIN PERIOD (4 OF 4)	ADS	SPU A	S	Early Orbit	seconds		Should be AF: 16-bit fixed w/scale factor
1	8	60	8	0	7	32	SPINPERB	SPINPERB	SPM SPIN PERIOD (1 OF 4)	ADS	SPU B	S	Early Orbit	seconds		Should be AF: 16-bit fixed w/scale factor
1	8	61	8	0	7	32	SPINPERB	SPINPERB	SPM SPIN PERIOD (2 OF 4)	ADS	SPU B	S	Early Orbit	seconds		Should be AF: 16-bit fixed w/scale factor
1	8	62	8	0	7	32	SPINPERB	SPINPERB	SPM SPIN PERIOD (3 OF 4)	ADS	SPU B	S	Early Orbit	seconds		Should be AF: 16-bit fixed w/scale factor
1	8	63	8	0	7	32	SPINPERB	SPINPERB	SPM SPIN PERIOD (4 OF 4)	ADS	SPU B	S	Early Orbit	seconds		Should be AF: 16-bit fixed w/scale factor
NA	NA	NA	NA	0	NA	8	SPITCHTC	SPITCHTC	PITCH TRIGGER COUNT	NDS	BDY	S	SSOH			410
8	8	52	8	0	7	32	SPMDLAYA	SPMDLAYA	SPM CEP TO FIRST PULSE DELAY (1 OF 4)	ADS	SPU A	S	Early Orbit			Should be AF: 16-bit fixed w/scale factor
8	8	53	8	0	7	32	SPMDLAYA	SPMDLAYA	SPM CEP TO FIRST PULSE DELAY (2 OF 4)	ADS	SPU A	S	Early Orbit			Should be AF: 16-bit fixed w/scale factor
8	8	54	8	0	7	32	SPMDLAYA	SPMDLAYA	SPM CEP TO FIRST PULSE DELAY (3 OF 4)	ADS	SPU A	S	Early Orbit			Should be AF: 16-bit fixed w/scale factor
8	8	55	8	0	7	32	SPMDLAYA	SPMDLAYA	SPM CEP TO FIRST PULSE DELAY (4 OF 4)	ADS	SPU A	S	Early Orbit			Should be AF: 16-bit fixed w/scale factor
8	8	60	8	0	7	32	SPMDLAYB	SPMDLAYB	SPM CEP TO FIRST PULSE DELAY (1 OF 4)	ADS	SPU B	S	Early Orbit			Should be AF: 16-bit fixed w/scale factor
8	8	61	8	0	7	32	SPMDLAYB	SPMDLAYB	SPM CEP TO FIRST PULSE DELAY (2 OF 4)	ADS	SPU B	S	Early Orbit			Should be AF: 16-bit fixed w/scale factor
8	8	62	8	0	7	32	SPMDLAYB	SPMDLAYB	SPM CEP TO FIRST PULSE DELAY (3 OF 4)	ADS	SPU B	S	Early Orbit			Should be AF: 16-bit fixed w/scale factor

8	8	63	8	0	7	32	SPMDLAYB	SPMDLAYB	SPM CEP TO FIRST PULSE DELAY (4 OF 4)	ADS	SPU B	S	Early Orbit			Should be AF: 16-bit fixed w/scale factor
3	8	55	1	7	7	1	SPMENA	SPMENA	SPM RUN FLAG	ADS	SPU A	S	Early Orbit		1=Enabled 0=Disabled	
3	8	63	1	7	7	1	SPMENB	SPMENB	SPM RUN FLAG	ADS	SPU B	S	Early Orbit		1=Enabled 0=Disabled	
6	8	54	8	0	7	16	SPMPAIRA	SPMPAIRA	SPM PULSE PAIRS REMAINING (1 OF 2)	ADS	SPU A	S	Early Orbit	counts		
6	8	55	8	0	7	16	SPMPAIRA	SPMPAIRA	SPM PULSE PAIRS REMAINING (2 OF 2)	ADS	SPU A	S	Early Orbit	counts		
6	8	62	8	0	7	16	SPMPAIRB	SPMPAIRB	SPM PULSE PAIRS REMAINING (1 OF 2)	ADS	SPU B	S	Early Orbit	counts		
6	8	63	8	0	7	16	SPMPAIRB	SPMPAIRB	SPM PULSE PAIRS REMAINING (1 OF 2)	ADS	SPU B	S	Early Orbit	counts		
7	8	54	8	0	7	16	SPMPWA	SPMPWA	SPM PULSEWIDTH (1 OF 2)	TT&C	SPU A	S	Early Orbit	seconds		
7	8	55	8	0	7	16	SPMPWA	SPMPWA	SPM PULSEWIDTH (2 OF 2)	TT&C	SPU A	S	Early Orbit	seconds		
7	8	62	8	0	7	16	SPMPWB	SPMPWB	SPM PULSEWIDTH (1 OF 2)	TT&C	SPU B	S	Early Orbit	seconds		
7	8	63	8	0	7	16	SPMPWB	SPMPWB	SPM PULSEWIDTH (2 OF 2)	TT&C	SPU B	S	Early Orbit	seconds		
7	8	53	3	5	7	3	SPMSLCTA	SPMSLCTA	SPM THRUSTER SELECTION	ADS	SPU A	S	Early Orbit		1=Off 1=Coarse Pri 2=Coarse Even 3=Coarse Odd 4=Fine Pri 5=Fine Even 6=Fine Odd	
7	8	61	3	5	7	3	SPMSLCTB	SPMSLCTB	SPM THRUSTER SELECTION	ADS	SPU B	S	Early Orbit		1=Off 1=Coarse Pri 2=Coarse Even 3=Coarse Odd 4=Fine Pri 5=Fine Even 6=Fine Odd	
A	7	10	1	4	4	1	SPUACONT	SPUACONT	SPU A IN CONTROL	TT&C	SPU	DL	All Power-Up		1=CPU B in Control 0=CPU A in Control	
A	7	10	1	3	3	1	SPUACPU	SPUACPU	SPU A CPU NORM / SWAP	TT&C	SPU	DL	All Power-Up		1=CPU Normal 0=CPU Swap	
1	3	56	8	0	7	8	SPUACV5V	SPUACV5V	SPU A CONV +5VDC OUT	TT&C	SPU	AH	All Power-Up	volts		
1	7	58	8	0	7	8	SPUACVT	SPUACVT	SPU A CONV TEMP	TT&C	SPU	AP	All Power-Up	Celsius		
A	7	64	1	0	0	1	SPUAGED1	SPUAGED1	SPU A GED 1 ON/OFF	TT&C	GED	DL	All Power-Up		1=Off 0=On	
A	8	64	1	0	0	1	SPUAGED2	SPUAGED2	SPU A GED 2 ON/OFF	TT&C	GED	DL	All Power-Up		1=Off 0=On	
A	7	10	1	6	6	1	SPUAIOP	SPUAIOP	SPU A I/O PWR ON/OFF	TT&C	SPU	DL	All Power-Up		1=Off 0=On	
A	7	10	1	2	2	1	SPUAMEM	SPUAMEM	SPU A MEMORY NORMAL	TT&C	SPU	DL	All Power-Up		1=Normal Memory 0=Swap Memory	
A	7	10	1	5	5	1	SPUASEL	SPUASEL	SPU A SELECT	TT&C	SPU	DL	All Power-Up		1=CPU B Selected 0=CPU A Selected	
A	7	11	1	4	4	1	SPUBCONT	SPUBCONT	SPU B IN CONTROL	TT&C	SPU	DL	All Power-Up		1=CPU A in Control 0=CPU B in Control	
A	7	11	1	3	3	1	SPUBCPU	SPUBCPU	SPU B CPU NORMAL/SWAP	TT&C	SPU	DL	All Power-Up		1=CPU Normal 0=CPU Swap	
4	4	56	8	0	7	8	SPUBCV5V	SPUBCV5V	SPU B CONV +5VDC OUT	TT&C	SPU	AH	All Power-Up	volts		
1	8	58	8	0	7	8	SPUBCVT	SPUBCVT	SPU B CONV TEMP	TT&C	SPU	AP	All Power-Up	Celsius		
A	7	64	1	1	1	1	SPUBGED1	SPUBGED1	SPU B GED 1 ON/OFF	TT&C	GED	DL	All Power-Up		1=Off 0=On	
A	8	64	1	1	1	1	SPUBGED2	SPUBGED2	SPU B GED 2 ON/OFF	TT&C	GED	DL	All Power-Up		1=Off 0=On	

A	7	11	1	6	6	1	SPUBIOP	SPUBIOP	SPU B I/O PWR ON/OFF	TT&C	SPU	DL	All Power-Up		1=Off 0=On	
A	7	11	1	2	2	1	SPUBMEM	SPUBMEM	SPU B MEMORY NORMAL	TT&C	SPU	DL	All Power-Up		1=Normal Memory 0=Swap Memory	
A	7	11	1	5	5	1	SPUBSEL	SPUBSEL	SPU B SELECT	TT&C	SPU	DL	All Power-Up		1=CPU B Selected 0=CPU A Selected	
A	3	14	8	0	7	16	SPUCMCTA	SPUCMCTA	SPU-CDU CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU A	S	Early Orbit			
A	3	15	8	0	7	16	SPUCMCTA	SPUCMCTA	SPU-CDU CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU A	S	Early Orbit			
8	7	54	8	0	7	16	SPUCMCTA	SPUCMCTA	SPU-CDU CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU A	S	Normal			
8	7	55	8	0	7	16	SPUCMCTA	SPUCMCTA	SPU-CDU CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU A	S	Normal			
7	7	54	8	0	7	16	SPUCMCTA	SPUCMCTA	SPU-CDU CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU A	S	Thruster			
7	7	55	8	0	7	16	SPUCMCTA	SPUCMCTA	SPU-CDU CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU A	S	Thruster			
A	3	22	8	0	7	16	SPUCMCTB	SPUCMCTB	SPU-CDU CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU B	S	Early Orbit			
A	3	23	8	0	7	16	SPUCMCTB	SPUCMCTB	SPU-CDU CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU B	S	Early Orbit			
8	7	62	8	0	7	16	SPUCMCTB	SPUCMCTB	SPU-CDU CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU B	S	Normal			
8	7	63	8	0	7	16	SPUCMCTB	SPUCMCTB	SPU-CDU CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU B	S	Normal			
7	7	62	8	0	7	16	SPUCMCTB	SPUCMCTB	SPU-CDU CMD ACCEPT COUNT (1 OF 2)	TT&C	SPU B	S	Thruster			
7	7	63	8	0	7	16	SPUCMCTB	SPUCMCTB	SPU-CDU CMD ACCEPT COUNT (2 OF 2)	TT&C	SPU B	S	Thruster			
3	7	58	8	0	7	8	SPUIFT	SPUIFT	+X BUS PNL/SPU I/F TEMP A	MSS	TCS	AP	All Power-Up	Celsius		
6	8	52	1	1	1	1	SPUIOCLA	SPUIOCLA	SPU I/O CONTROL	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 52 (lower half-first word)
7	4	54	1	1	1	1	SPUIOCLA	SPUIOCLA	SPU I/O CONTROL	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 54 (lower half-first word)
6	8	60	1	1	1	1	SPUIOCLB	SPUIOCLB	SPU I/O CONTROL	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 60 (lower half-first word)
7	4	62	1	1	1	1	SPUIOCLB	SPUIOCLB	SPU I/O CONTROL	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 62 (lower half-first word)
A	1	12	4	0	3	4	SPUMODEA	SPUMODEA	SPU MODE	TT&C	SPU A	S	All		1=Power-Up 2=Early Orbit 3=Normal 4=Thruster 0 and 5-7 Unused	TLM Flag Word 12 (first word)
A	1	20	4	0	3	4	SPUMODEB	SPUMODEB	SPU MODE	TT&C	SPU B	S	All		1=Power-Up 2=Early Orbit 3=Normal 4=Thruster 0 and 5-7 Unused	TLM Flag Word 20 (first word)
A	1	12	4	0	3	4	SPUMODPA	SPUMODPA	SPU MODE	TT&C	SPU A	S	Power-Up		1=Power-Up 2=Early Orbit 3=Normal 4=Thruster 0 and 5-7 Unused	TLM Flag Word 12 (first word)
A	1	20	4	0	3	4	SPUMODPB	SPUMODPB	SPU MODE	TT&C	SPU B	S	Power-Up		1=Power-Up 2=Early Orbit 3=Normal 4=Thruster 0 and 5-7 Unused	TLM Flag Word 20 (first word)
NA	NA	NA	NA	0	NA	8	SROLLTC	SROLLTC	ROLL TRIGGER COUNT	NDS	BDY	S	SSOH			411
NA	NA	NA	NA	0	NA	8	SSEGIBV	SSEGIBV	I SEGMENT BIAS	NDS	BDY	S	SSOH			403

NA	NA	NA	NA	0	NA	8	SSEGIFB	SSEGIFB	I SEGMENT FEEDBACK	NDS	BDY	S	SSOH			405
NA	NA	NA	NA	0	NA	8	SSEGJBV	SSEGJBV	J SEGMENT BIAS	NDS	BDY	S	SSOH			404
NA	NA	NA	NA	0	NA	8	SSEGJFB	SSEGJFB	J SEGMENT FEEDBACK	NDS	BDY	S	SSOH			406
NA	NA	NA	NA	0	NA	1	SSOHDUMP	SSOHDUMP	SSOH/DUMP	NDS	BDP-MP	S	SSOH			47
NA	NA	NA	NA	3	NA	1	SSOHINT	SSOHINT	SSOH INTERRUPT SELEC	NDS	BDP	S	SSOH			3011
NA	NA	NA	NA	0	NA	8	SSOHINTV	SSOHINTV	TIMBETWSSOHSUBFRMCOL	NDS	BDP	S	SSOH			3016
NA	NA	NA	NA	0	NA	1	SSOHMODE	SSOHMODE	SSOH COLLECTION MODE	NDS	BDP	S	SSOH			3015
NA	NA	NA	NA	0	NA	16	SSOHOP	SSOHOP	SSOH OUTPUT POINTER	NDS	BDP-MP	S	SSOH			97
NA	NA	NA	NA	0	NA	8	SSOHSTH	SSOHSTH	STRTZTIME SSOHFRMCOL	NDS	BDP	S	SSOH			3017
NA	NA	NA	NA	0	NA	8	SSOHSTL	SSOHSTL	STRTZTIME SSOHFRMCOL	BDP	BDY	S	SSOH			3018
NA	NA	NA	NA	0	NA	16	SSOHUPIP	SSOHUPIP	SSOH SUBFRMI/P POINT	NDS	BDP-IP	S	SSOH			199
NA	NA	NA	NA	0	NA	8	SSOLENC	SSOLENC	SSOL_EN_CNT	NDS	BDY	S	SSOH			245
NA	NA	NA	NA	0	NA	8	SSOLINCA	SSOLINCA	SSOL__INHCNT_A	NDS	BDY	S	SSOH			243
NA	NA	NA	NA	0	NA	8	SSOLINCB	SSOLINCB	SSOL__INHCNT_B	NDS	BDY	S	SSOH			244
NA	NA	NA	NA	0	NA	16	STATHSIP	STATHSIP	STAT HIST I/P POINT	NDS	BDP-IP	S	SSOH			201
NA	NA	NA	NA	4	NA	1	STBBOPEN	STBBOPEN	STRATEGIC BUILDBUFFOPEN	NDS	BDP-MP	S	SSOH			48
NA	NA	NA	NA	2	NA	1	STBBSLCT	STBBSLCT	STRATEGICBUILDBUFFERS EL	NDS	BDP-MP	S	SSOH			48
NA	NA	NA	NA	7	NA	1	STDCFIG	STDCFIG	BIIR STAND CONFIG	NDS	BDP	S	SSOH			3015
NA	NA	NA	NA	0	NA	8	STMSGRCV	STMSGRCV	CUM STAT MSG REC CNT	NDS	BDP	S	SSOH			399
NA	NA	NA	NA	4	NA	2	STSTPAMP	STSTPAMP	BDY SYSTSTSETPULSAMP	NDS	BDP	S	SSOH			2973
NA	NA	NA	NA	2	NA	2	STSTPEAK	STSTPEAK	BDY SYSTSTSETRMPPEAK	NDS	BDP	S	SSOH			2973
NA	NA	NA	NA	6	NA	2	STSTPWID	STSTPWID	BDY SYSTSTSETPULSWID	NDS	BDP	S	SSOH			2973
NA	NA	NA	NA	4	NA	4	STSTSBIT	STSTSBIT	SYS TEST SERIES BITS	NDS	BDP	S	SSOH			2985
NA	NA	NA	NA	0	NA	8	STSTTIME	STSTTIME	SYSTEM TEST TIME	NDS	BDP	S	SSOH			2983
NA	NA	NA	NA	4	NA	1	STXFRMSG	STXFRMSG	XFER MSG FLAG STATUS	NDS	BDP-MP	S	SSOH			46
NA	NA	NA	NA	0	NA	8	SUBHDR	SUBHDR	SSOH HEXSYNCPATTERN	NDS	BDP	S	SSOH			384
3	4	54	1	0	0	1	SUNLKA	SUNLKA	SUN LOCK	TT&C	SPU A	S	Normal Thruster		0=No Sun Lock 1=Sun Lock	ADS Flag Word
3	4	62	1	0	0	1	SUNLKB	SUNLKB	SUN LOCK	TT&C	SPU B	S	Normal Thruster		0=No Sun Lock 1=Sun Lock	ADS Flag Word
NA	NA	NA	NA	1	NA	7	SVID	SVID	SVID	NDS	BDP	S	SSOH			2986
A	1	13	2	5	6	2	SVSOHA	SVSOHA	REDUNDANCY MGMT SV STATE OF HEALTH	TT&C	SPU A	S	All		0=Green 1=Yellow 2=Amber 3=Red	TLM Flag Word 13 (second word)
A	1	21	2	5	6	2	SVSOHB	SVSOHB	REDUNDANCY MGMT SV STATE OF HEALTH	TT&C	SPU B	S	All		0=Green 1=Yellow 2=Amber 3=Red	TLM Flag Word 21 (second word)
NA	NA	NA	NA	0	NA	16	SWHAEVTR	SWHAEVTR	BDP IP WH A BUFEVCT	NDS	BDP	S	SSOH			387
NA	NA	NA	NA	0	NA	16	SWHBEVTR	SWHBEVTR	BDP IP WHS B BUFEVCT	NDS	BDP	S	SSOH			389
NA	NA	NA	NA	0	NA	16	SWLAEVTR	SWLAEVTR	BDP IP WL A BUFEVCT	NDS	BDP	S	SSOH			391
NA	NA	NA	NA	0	NA	16	SWLBEVTR	SWLBEVTR	BDP IP WLS B BUFEVCT	NDS	BDP	S	SSOH			393
NA	NA	NA	NA	0	NA	8	SWVER	SWVER	SOFTWARE VERSION	NDS	BDD/X	S	SSOH			263
NA	NA	NA	NA	4	NA	1	SXFRERR	SXFRERR	BDY SERIAL XFER ERROR	NDS	BDY	S	SSOH			254
NA	NA	NA	NA	0	NA	8	SYFSTFB	SYFSTFB	YFAST FEEDBACK	NDS	BDY	S	SSOH			402
NA	NA	NA	NA	0	NA	8	SYFSTL	SYFSTL	YFAST LTNINGUNTRGCNT	NDS	BDY	S	SSOH			415
NA	NA	NA	NA	0	NA	8	SYFSTN	SYFSTN	YFAST S7 NOISE	NDS	BDY	S	SSOH			401
NA	NA	NA	NA	0	NA	8	SYFSTP	SYFSTP	YFAST PARTICUNTRGCNT	NDS	BDY	S	SSOH			414
NA	NA	NA	NA	0	NA	8	SYFSTTC	SYFSTTC	YFAST TRIGGER COUNT	NDS	BDY	S	SSOH			408
A	A	1	8	0	7	24	SYNCWRD	SYNCWRD	TLM SYNC WORD (1 OF 3)	TT&C	TIU	S	All Power-Up			Sync Word 1 (FA Hex)
A	A	2	8	0	7	24	SYNCWRD	SYNCWRD	TLM SYNC WORD (2 OF 3)	TT&C	TIU	S	All Power-Up			Sync Word 2 (F3 Hex)
A	A	3	8	0	7	24	SYNCWRD	SYNCWRD	TLM SYNC WORD (3 OF 3)	TT&C	TIU	S	All Power-Up			Sync Word 3 (20 Hex)
NA	NA	NA	NA	0	NA	8	SYSLOL	SYSLOL	YSLOW LTNINGUNTRGCNT	NDS	BDY	S	SSOH			413
NA	NA	NA	NA	0	NA	8	SYSLON	SYSLON	YSLOW S7 NOISE	NDS	BDY	S	SSOH			400
NA	NA	NA	NA	0	NA	8	SYSLOP	SYSLOP	YSLOW PARTICUNTRGCNT	NDS	BDY	S	SSOH			412
NA	NA	NA	NA	0	NA	8	SYSLOTC	SYSLOTC	YSLOW TRIGGER COUNT	NDS	BDY	S	SSOH			409
NA	NA	NA	NA	0	NA	1	SYSTEST	SYSTEST	TIM/NXTX1 EPOCSYSTST	NDS	BDP	S	SSOH			2984
NA	NA	NA	NA	7	NA	1	SYSTST21	SYSTST21	SYS TEST 2-1 (SPIKE)	NDS	BDY	S	SSOH			215
NA	NA	NA	NA	6	NA	1	SYSTST22	SYSTST22	SYS TEST 2-2 (SQUARE)	NDS	BDY	S	SSOH			215
NA	NA	NA	NA	5	NA	1	SYSTST24	SYSTST24	SYS TEST 2-4 (RAMP)	NDS	BDY	S	SSOH			215

NA	NA	NA	NA	4	NA	1	SYSTST28	SYSTST28	SYS TEST 2-8 (MOTION)	NDS	BDY	S	SSOH			215
NA	NA	NA	NA	1	NA	1	SYSTSTEN	SYSTSTEN	SYSTEM TEST ENABLE	NDS	BDY	S	SSOH			215
NA	NA	NA	NA	0	NA	1	SYSTSTEX	SYSTSTEX	SYSTEM TEST EXECUTE	NDS	BDY	S	SSOH			215
NA	NA	NA	NA	1	NA	1	TESTMEM	TESTMEM	ENABLE TEST MEMORY	NDS	BDP	S	SSOH			3015
4	4	54	2	6	7	2	THRABRTA	THRABRTA	THRUST CNTRL ABORT THRUSTER SELECT	TT&C	SPU A	S	Thruster		0=Odd Half 1=Even Half 2=Both Halves	Thruster Flag Word 54 (first word)
4	4	62	2	6	7	2	THRABRTB	THRABRTB	THRUST CNTRL ABORT THRUSTER SELECT	TT&C	SPU B	S	Thruster		0=Odd Half 1=Even Half 2=Both Halves	Thruster Flag Word 62 (first word)
A	1	13	1	4	4	1	THRONA	THRONA	THRUSTERS ON	TT&C	SPU A	S	All		0=Thrusters Off 1=Thrusters On	TLM Flag Word 13 (second word)
A	1	21	1	4	4	1	THRONB	THRONB	THRUSTERS ON	TT&C	SPU B	S	All		0=Thrusters Off 1=Thrusters On	TLM Flag Word 21 (second word)
3	4	55	1	2	2	1	THRPWLMA	THRPWLMA	THRUSTER PULSEWIDTH LIMIT	TT&C	SPU A	S	Normal Thruster		0=PW < Max Pulsewidth (PID Enabled) 1=PW > Max Pulsewidth (PID Disabled)	ADS Flag Word
3	4	63	1	2	2	1	THRPWLMB	THRPWLMB	THRUSTER PULSEWIDTH LIMIT	TT&C	SPU B	S	Normal Thruster		0=PW < Max Pulsewidth (PID Enabled) 1=PW > Max Pulsewidth (PID Disabled)	ADS Flag Word
NA	NA	NA	NA	0	NA	8	TIME0H	TIME0H	SOLARINHCNSTNT-@0HI	NDS	BDP	S	SSOH			2952
NA	NA	NA	NA	0	NA	8	TIME0L	TIME0L	SOLARINHCNSTNTS-@0LO	NDS	BDP	S	SSOH			2953
NA	NA	NA	NA	0	NA	8	TIME1H	TIME1H	SOLARINHCNSTNT-@1HI	NDS	BDP	S	SSOH			2954
NA	NA	NA	NA	0	NA	8	TIME1L	TIME1L	SOLARINHCNSTNTS-@1LO	NDS	BDP	S	SSOH			2955
NA	NA	NA	NA	0	NA	8	TIMINT1H	TIMINT1H	TIME INTERVAL 1 HI 8	NDS	BDP	S	SSOH			3030
NA	NA	NA	NA	0	NA	8	TIMINT1L	TIMINT1L	TIME INTERVAL 1 LO 8	NDS	BDP	S	SSOH			3031
NA	NA	NA	NA	0	NA	8	TIMINT2H	TIMINT2H	TIME INTERVAL 2 HI 8	NDS	BDP	S	SSOH			3032
NA	NA	NA	NA	0	NA	8	TIMINT2L	TIMINT2L	TIME INTERVAL 2 LO 8	NDS	BDP	S	SSOH			3033
NA	NA	NA	NA	0	NA	8	TIMINT3H	TIMINT3H	TIME INTERVAL 3 HI 8	NDS	BDP	S	SSOH			3034
NA	NA	NA	NA	0	NA	8	TIMINT3L	TIMINT3L	TIME INTERVAL 3 LO 8	NDS	BDP	S	SSOH			3035
A	6	15	1	7	7	1	TIMRDISA	TIMRDISA	FLAG INDIC IF 5 MIN BOOT TIMER IS DISABLED	TT&C	SPU A	S	Power-Up		1=Disabled 0=Enabled	
A	6	23	1	7	7	1	TIMRDISB	TIMRDISB	FLAG INDIC IF 5 MIN BOOT TIMER IS DISABLED	TT&C	SPU B	S	Power-Up		1=Disabled 0=Enabled	
A	A	9	2	0	1	2	TIU1718	TIU1718	TIU SERIAL CMD ECHO BITS 18/17	TT&C	TIU	S	All Power-Up		Binary value (TIU CMD echo bits 18,17)	Last 2 bits of TIU serial cmd echo (unallocated)
1	4	56	8	0	7	8	TIUACV5V	TIUACV5V	TIU A CONV +5VDC OUT	TT&C	TIU	AH	All Power-Up	volts		
4	3	58	8	0	7	8	TIUACVT	TIUACVT	TIU A CONV TEMP	TT&C	TIU	AP	All Power-Up	Celsius		
4	5	56	8	0	7	8	TIUBCV5V	TIUBCV5V	TIU B CONV +5VDC OUT	TT&C	TIU	AH	All Power-Up	volts		
4	4	58	8	0	7	8	TIUBCVT	TIUBCVT	TIU B CONV TEMP	TT&C	TIU	AP	All Power-Up	Celsius		
6	8	52	1	7	7	1	TIUENA	TIUENA	TELEMETRY INFORMATION UNIT	TT&C	SPU A	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 52 (lower half-first word)
7	4	54	1	7	7	1	TIUENA	TIUENA	TELEMETRY INFORMATION UNIT	TT&C	SPU A	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 54 (lower half-first word)
6	8	60	1	7	7	1	TIUENB	TIUENB	TELEMETRY INFORMATION UNIT	TT&C	SPU B	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 60 (lower half-first word)
7	4	62	1	7	7	1	TIUENB	TIUENB	TELEMETRY INFORMATION UNIT	TT&C	SPU B	S	Thruster		0=Disabled 1=Enabled	RDMGMT Flag Word 62 (lower half-first word)
6	7	55	1	5	5	1	TIUFCNTA	TIUFCNTA	TIU FRAME COUNT	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 55 (upper half-second word)
6	5	53	1	5	5	1	TIUFCNTA	TIUFCNTA	TIU FRAME COUNT	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 53 (upper half-second word)
6	7	63	1	5	5	1	TIUFCNTB	TIUFCNTB	TIU FRAME COUNT	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 63 (upper half-second word)

6	5	61	1	5	5	1	TIUFCNTB	TIUFCNTB	TIU FRAME COUNT	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 61 (upper half-second word)
6	7	55	1	4	4	1	TIUPWRA	TIUPWRA	TIU POWER	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 55 (upper half-second word)
6	5	53	1	4	4	1	TIUPWRA	TIUPWRA	TIU POWER	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 53 (upper half-second word)
6	7	63	1	4	4	1	TIUPWRB	TIUPWRB	TIU POWER	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 63 (upper half-second word)
6	5	61	1	4	4	1	TIUPWRB	TIUPWRB	TIU POWER	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 61 (upper half-second word)
6	7	55	1	3	3	1	TIURDBKA	TIURDBKA	TIU READBACK	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 55 (upper half-second word)
6	5	53	1	3	3	1	TIURDBKA	TIURDBKA	TIU READBACK	TT&C	SPU A	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 53 (upper half-second word)
6	7	63	1	3	3	1	TIURDBKB	TIURDBKB	TIU READBACK	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 63 (upper half-second word)
6	5	61	1	3	3	1	TIURDBKB	TIURDBKB	TIU READBACK	TT&C	SPU B	S	Thruster		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 61 (upper half-second word)
2	1	56	8	0	7	8	TLM176A	TLM176A	TIU A 1.763V TLM	TT&C	TIU	AH	All Power-Up	volts		
3	4	56	8	0	7	8	TLM176B	TLM176B	TIU B 1.763V TLM	TT&C	TIU	AH	All Power-Up	volts		
1	6	56	8	0	7	8	TLM194A	TLM194A	TIU A 0.194V TLM	TT&C	TIU	AH	All Power-Up	volts		
3	3	56	8	0	7	8	TLM194B	TLM194B	TIU B 0.194V TLM	TT&C	TIU	AH	All Power-Up	volts		
3	1	56	8	0	7	8	TLM329A	TLM329A	TIU A 3.294V TLM	TT&C	TIU	AH	All Power-Up	volts		
5	1	56	8	0	7	8	TLM329B	TLM329B	TIU B 3.294V TLM	TT&C	TIU	AH	All Power-Up	volts		
3	2	56	8	0	7	8	TLM489A	TLM489A	TIU A 4.892V TLM	TT&C	TIU	AH	All Power-Up	volts		
5	2	56	8	0	7	8	TLM489B	TLM489B	TIU B 4.892V TLM	TT&C	TIU	AH	All Power-Up	volts		
1	1	57	8	0	7	8	TLMCALA	TLMCALA	TIU A PASSIVE TLM CALIBRATE	TT&C	TIU	AH	All Power-Up	mA		
1	2	57	8	0	7	8	TLMCALB	TLMCALB	TIU B PASSIVE TLM CALIBRATE	TT&C	TIU	AH	All Power-Up	mA		
A	1	10	1	1	1	1	TLMFMT	TLMFMT	TELEMETRY FORMAT	TT&C	TIU	S	All Power-Up		1=Format 2 0=Format 1	First word (8 bits) of TIU serial cmd echo
1	5	56	8	0	7	8	TLMGNDA	TLMGNDA	TIU GND TLM 1	TT&C	TIU	AH	All Power-Up	volts		
4	6	56	8	0	7	8	TLMGNDB	TLMGNDB	TIU GND TLM 2	TT&C	TIU	AH	All Power-Up	volts		
A	1	10	2	2	3	2	TLMMODE	TLMMODE	TELEMETRY MODE	TT&C	TIU	S	All Power-Up		0=Normal 1=Dump 2=Dwell 3=Unused	First word (8 bits) of TIU serial cmd echo
A	1	10	1	0	0	1	TLMRATE	TLMRATE	TELEMETRY DWNLNK RATE 500/4000	TT&C	TIU	S	All Power-Up		1=500 bps 0=4000 bps	First word (8 bits) of TIU serial cmd echo
NA	NA	NA	NA	3	NA	1	TMSYSTST	TMSYSTST	TIMED SYS TEST SCHED	NDS	BDY	S	SSOH			215
7	1	57	8	0	7	8	TNK1T	TNK1T	RCS TANK 1 TEMP	RCS	TNK	AP	All Power-Up	Celsius		
7	2	57	8	0	7	8	TNK2T	TNK2T	RCS TANK 2 TEMP	RCS	TNK	AP	All Power-Up	Celsius		
A	7	40	8	0	7	8	TNKPRES1	TNKPRES1	RCS TANK 1 XDCR PRESSURE	RCS	TNK	AH	All Power-Up	psia		
A	7	48	8	0	7	8	TNKPRES2	TNKPRES2	RCS TANK 2 XDCR PRESSURE	RCS	TNK	AH	All Power-Up	psia		
NA	NA	NA	NA	0	NA	1	TOAPROC	TOAPROC	DISABLE TOA PROCESS	NDS	BDP	S	SSOH			3066
A	3	54	8	0	7	16	TORQPITA	TORQPITA	TORQUE DEMAND PITCH (1 OF 2)	ADS	SPU A	S	Normal	in-lbf		
A	3	55	8	0	7	16	TORQPITA	TORQPITA	TORQUE DEMAND PITCH (2 OF 2)	ADS	SPU A	S	Normal	in-lbf		
A	3	62	8	0	7	16	TORQPITB	TORQPITB	TORQUE DEMAND PITCH (1 OF 2)	ADS	SPU B	S	Normal	in-lbf		
A	3	63	8	0	7	16	TORQPITB	TORQPITB	TORQUE DEMAND PITCH (2 OF 2)	ADS	SPU B	S	Normal	in-lbf		
A	3	52	8	0	7	16	TORQROLA	TORQROLA	TORQUE DEMAND ROLL (1 OF 2)	ADS	SPU A	S	Normal	in-lbf		
A	3	53	8	0	7	16	TORQROLA	TORQROLA	TORQUE DEMAND ROLL (2 OF 2)	ADS	SPU A	S	Normal	in-lbf		
A	3	60	8	0	7	16	TORQROLB	TORQROLB	TORQUE DEMAND ROLL (1 OF 2)	ADS	SPU B	S	Normal	in-lbf		
A	3	61	8	0	7	16	TORQROLB	TORQROLB	TORQUE DEMAND ROLL (2 OF 2),	ADS	SPU B	S	Normal	in-lbf		
A	4	52	8	0	7	16	TORQYAWA	TORQYAWA	TORQUE DEMAND YAW (1 OF 2)	ADS	SPU A	S	Normal	in-lbf		
A	4	53	8	0	7	16	TORQYAWA	TORQYAWA	TORQUE DEMAND YAW (2 OF 2)	ADS	SPU A	S	Normal	in-lbf		
A	4	60	8	0	7	16	TORQYAWB	TORQYAWB	TORQUE DEMAND YAW (1 OF 2)	ADS	SPU B	S	Normal	in-lbf		
A	4	61	8	0	7	16	TORQYAWB	TORQYAWB	TORQUE DEMAND YAW (2 OF 2)	ADS	SPU B	S	Normal	in-lbf		
NA	NA	NA	NA	0	NA	8	TOTASK	TOTASK	TIME-OUT TASK FLAG	NDS	BDP-IP	S	SSOH			162
A	8	52	8	0	7	16	TPFBURNA	TPFBURNA	TPF THRUSTER BURNTIME (1 OF 2)	TT&C	SPU A	S	Early Orbit	seconds		
A	8	53	8	0	7	16	TPFBURNA	TPFBURNA	TPF THRUSTER BURNTIME (2 OF 2)	TT&C	SPU A	S	Early Orbit	seconds		

A	8	60	8	0	7	16	TPFBURNB	TPFBURNB	TPF THRUSTER BURNTIME (1 OF 2)	TT&C	SPU B	S	Early Orbit	seconds		
A	8	61	8	0	7	16	TPFBURNB	TPFBURNB	TPF THRUSTER BURNTIME (2 OF 2)	TT&C	SPU B	S	Early Orbit	seconds		
2	8	53	1	7	7	1	TPFENA	TPFENA	TPF RUN FLAG	ADS	SPU A	S	Early Orbit		1=Running 0=Not Running	
2	8	61	1	7	7	1	TPFENB	TPFENB	TPF RUN FLAG	ADS	SPU B	S	Early Orbit		1=Running 0=Not Running	
5	8	52	1	0	0	1	TPFSL01A	TPFSL01A	TPF THRUSTER SELECTION -REA 01	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	60	1	0	0	1	TPFSL01B	TPFSL01B	TPF THRUSTER SELECTION -REA 01	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	52	1	1	1	1	TPFSL02A	TPFSL02A	TPF THRUSTER SELECTION -REA 02	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	60	1	1	1	1	TPFSL02B	TPFSL02B	TPF THRUSTER SELECTION -REA 02	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	52	1	2	2	1	TPFSL03A	TPFSL03A	TPF THRUSTER SELECTION -REA 03	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	60	1	2	2	1	TPFSL03B	TPFSL03B	TPF THRUSTER SELECTION -REA 03	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	52	1	3	3	1	TPFSL04A	TPFSL04A	TPF THRUSTER SELECTION -REA 04	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	60	1	3	3	1	TPFSL04B	TPFSL04B	TPF THRUSTER SELECTION -REA 04	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	52	1	4	4	1	TPFSL05A	TPFSL05A	TPF THRUSTER SELECTION -REA 05	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	60	1	4	4	1	TPFSL05B	TPFSL05B	TPF THRUSTER SELECTION -REA 05	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	52	1	5	5	1	TPFSL06A	TPFSL06A	TPF THRUSTER SELECTION -REA 05	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	60	1	5	5	1	TPFSL06B	TPFSL06B	TPF THRUSTER SELECTION -REA 05	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	52	1	6	6	1	TPFSL07A	TPFSL07A	TPF THRUSTER SELECTION -REA 07	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	60	1	6	6	1	TPFSL07B	TPFSL07B	TPF THRUSTER SELECTION -REA 07	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	52	1	7	7	1	TPFSL08A	TPFSL08A	TPF THRUSTER SELECTION -REA 08	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	60	1	7	7	1	TPFSL08B	TPFSL08B	TPF THRUSTER SELECTION -REA 08	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	53	1	0	0	1	TPFSL09A	TPFSL09A	TPF THRUSTER SELECTION -REA 09	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	61	1	0	0	1	TPFSL09B	TPFSL09B	TPF THRUSTER SELECTION -REA 09	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	53	1	1	1	1	TPFSL10A	TPFSL10A	TPF THRUSTER SELECTION -REA 10	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	61	1	1	1	1	TPFSL10B	TPFSL10B	TPF THRUSTER SELECTION -REA 10	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	53	1	2	2	1	TPFSL11A	TPFSL11A	TPF THRUSTER SELECTION -REA 11	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	61	1	2	2	1	TPFSL11B	TPFSL11B	TPF THRUSTER SELECTION -REA 11	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	53	1	3	3	1	TPFSL12A	TPFSL12A	TPF THRUSTER SELECTION -REA 12	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	61	1	3	3	1	TPFSL12B	TPFSL12B	TPF THRUSTER SELECTION -REA 12	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	53	1	4	4	1	TPFSL13A	TPFSL13A	TPF THRUSTER SELECTION -REA 13	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	

5	8	61	1	4	4	1	TPFSL13B	TPFSL13B	TPF THRUSTER SELECTION -REA 13	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	53	1	5	5	1	TPFSL14A	TPFSL14A	TPF THRUSTER SELECTION -REA 14	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	61	1	5	5	1	TPFSL14B	TPFSL14B	TPF THRUSTER SELECTION -REA 14	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	53	1	6	6	1	TPFSL15A	TPFSL15A	TPF THRUSTER SELECTION -REA 15	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	61	1	6	6	1	TPFSL15B	TPFSL15B	TPF THRUSTER SELECTION -REA 15	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
5	8	53	1	7	7	1	TPFSL16A	TPFSL16A	TPF THRUSTER SELECTION -REA 16	ADS	SPU A	S	Early Orbit		0=Not Selected 1=Selected	
5	8	61	1	7	7	1	TPFSL16B	TPFSL16B	TPF THRUSTER SELECTION -REA 16	ADS	SPU B	S	Early Orbit		0=Not Selected 1=Selected	
4	8	54	8	0	7	16	TPFTIMRA	TPFTIMRA	TPF COUNTDOWN TIMER (1 OF 2)	TT&C	SPU A	S	Early Orbit	seconds		
4	8	55	8	0	7	16	TPFTIMRA	TPFTIMRA	TPF COUNTDOWN TIMER (2 OF 2)	TT&C	SPU A	S	Early Orbit	seconds		
4	8	62	8	0	7	16	TPFTIMRB	TPFTIMRB	TPF COUNTDOWN TIMER (1 OF 2)	TT&C	SPU B	S	Early Orbit	seconds		
4	8	63	8	0	7	16	TPFTIMRB	TPFTIMRB	TPF COUNTDOWN TIMER (2 OF 2)	TT&C	SPU B	S	Early Orbit	seconds		
6	8	53	1	2	2	1	TQCENA	TQCENA	TORQUE COILS	TT&C	SPU A	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 53 (lower half-second word)
7	4	55	1	2	2	1	TQCENA	TQCENA	TORQUE COILS	TT&C	SPU A	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 55 (lower half-second word)
6	8	61	1	2	2	1	TQCENB	TQCENB	TORQUE COILS	TT&C	SPU B	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 61 (lower half-second word)
7	4	63	1	2	2	1	TQCENB	TQCENB	TORQUE COILS	TT&C	SPU B	S	Normal		0=Disabled 1=Enabled	RDMGMT Flag Word 63 (lower half-second word)
6	7	55	1	7	7	1	TQCHCURA	TQCHCURA	TORQUE COIL HIGH CURRENT	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 55 (upper half-second word)
6	5	53	1	7	7	1	TQCHCURA	TQCHCURA	TORQUE COIL HIGH CURRENT	TT&C	SPU A	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 53 (upper half-second word)
6	7	63	1	7	7	1	TQCHCURB	TQCHCURB	TORQUE COIL HIGH CURRENT	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 63 (upper half-second word)
6	5	61	1	7	7	1	TQCHCURB	TQCHCURB	TORQUE COIL HIGH CURRENT	TT&C	SPU B	S	Normal		0=Test Disabled 1=Test Enabled	RDMGMT Flag Word 61 (upper half-second word)
NA	NA	NA	NA	3	NA	1	TRAPINT	TRAPINT	TRAP	NDS	BDP-IP	S	SSOH			164
A	1	41	1	3	3	1	TRIGGOA	TRIGGOA	MDU A TRIGGER GO	TNP	MDU	DL	All Power-Up		1=Counter OK 0=Counter Overflow	
A	1	42	1	3	3	1	TRIGGOB	TRIGGOB	MDU B TRIGGER GO	TNP	MDU	DL	All Power-Up		1=Counter OK 0=Counter Overflow	
NA	NA	NA	NA	2	NA	1	TSTMEMOV	TSTMEMOV	TESTMEMOVERWRITBYWH S	NDS	BDP	S	SSOH			3015
NA	NA	NA	NA	0	NA	8	TSTMEMTH	TSTMEMTH	ZTIME FOR TEST MEM H18	NDS	BDP	S	SSOH			3028
NA	NA	NA	NA	0	NA	8	TSTMEMTL	TSTMEMTL	ZTIME FOR TEST MEM LO8	NDS	BDP	S	SSOH			3029
5	1	58	8	0	7	8	TTCXIFT	TTCXIFT	-X BUS PNL/S-BAND XPONDER I/F TEMP C	MSS	TCS	AP	All Power-Up	Celsius		
NA	NA	NA	NA	6	NA	1	TWOCOMP	TWOCOMP	2'S COMPLIMENT	NDS	BDY	S	SSOH			217
3	1	58	8	0	7	8	UHFEL10T	UHFEL10T	UHF ANTENNA PNL ELEM 10 TEMP B	ANT	UHF	AP	All Power-Up	Celsius		
2	5	58	8	0	7	8	UHFEL7T	UHFEL7T	UHF ANTENNA PNL ELEM 7 TEMP A	ANT	UHF	AP	All Power-Up	Celsius		
2	6	58	8	0	7	8	UHFEL9T	UHFEL9T	UHF ANTENNA PNL ELEM 9 TEMP C	ANT	UHF	AP	All Power-Up	Celsius		
A	1	16	1	3	3	1	ULXST0A	ULXST0A	S-BAND UPLNK/XSTP STAT 0-A	TT&C	SBT	S	All Power-Up			See S-Band Mode Table
A	1	16	1	7	7	1	ULXST0B	ULXST0B	S-BAND UPLNK/XSTP STAT 0-B	TT&C	SBT	S	All Power-Up			See S-Band Mode Table
A	2	16	1	3	3	1	ULXST1A	ULXST1A	S-BAND UPLNK/XSTP STAT 1-A	TT&C	SBT	S	All Power-Up			See S-Band Mode Table
A	2	16	1	7	7	1	ULXST1B	ULXST1B	S-BAND UPLNK/XSTP STAT 1-B	TT&C	SBT	S	All Power-Up			See S-Band Mode Table
NA	NA	NA	NA	0	NA	8	UMBRAH	UMBRAH	UMBRA (8 MSB)	NDS	BDP	S	SSOH			2960
NA	NA	NA	NA	0	NA	8	UMBRAL	UMBRAL	UMBRA (8 LSB)	NDS	BDP	S	SSOH			2961

A	1	13	1	0	0	1	UPINVLDA	UPINVLDA	INVALID STATUS	TT&C	SPU A	S	All		0=No Invalid Status 1=Invalid Status	TLM Flag Word 13 (second word)
A	1	21	1	0	0	1	UPINVLDB	UPINVLDB	INVALID STATUS	TT&C	SPU B	S	All		0=No Invalid Status 1=Invalid Status	TLM Flag Word 21 (second word)
A	1	12	1	7	7	1	UPLKBUFA	UPLKBUFA	UPLINK BUFFER FULL	TT&C	SPU A	S	All		0=No Invalid Status 1=Invalid Status	TLM Flag Word 12 (first word)
A	1	20	1	7	7	1	UPLKBUFB	UPLKBUFB	UPLINK BUFFER FULL	TT&C	SPU B	S	All		0=No Invalid Status 1=Invalid Status	TLM Flag Word 20 (first word)
NA	NA	NA	NA	1	NA	1	UPLOADEE	UPLOADEE	UPLOAD EE FLAG	NDS	BDP-MP	S	SSOH			48
NA	NA	NA	NA	0	NA	8	UPLRECVD	UPLRECVD	UPLOAD RECEIVE CNT	NDS	BDP-MP	S	SSOH			39
NA	NA	NA	NA	5	NA	1	UPXFRMSG	UPXFRMSG	XFER MSG FLAG UPLOAD	NDS	BDP-MP	S	SSOH			46
NA	NA	NA	NA	5	NA	1	USART	USART	RST USART&SEND16EOMS	NDS	BDP	S	SSOH			3066
A	A	18	8	0	7	21	VCC1	VCC1	VCC WORD (2 OF 3)	TT&C	KIR-23	S	All Power-Up			Loral mnemonic = "VCC-1"
A	A	19	6	0	5	21	VCC1	VCC1	VCC WORD (3 OF 3)	TT&C	KIR-23	S	All Power-Up			Loral mnemonic = "VCC-1"
A	A	17	7	1	7	21	VCC1	VCC1	VCC WORD (1 OF 3)	TT&C	KIR-23	S	All Power-Up			Loral mnemonic = "VCC-1"
A	A	50	8	0	7	21	VCC2	VCC2	VCC WORD (2 OF 3)	TT&C	KIR-23	S	All Power-Up			Loral mnemonic = "VCC-2"
A	A	51	6	0	5	21	VCC2	VCC2	VCC WORD (3 OF 3)	TT&C	KIR-23	S	All Power-Up			Loral mnemonic = "VCC-2"
A	A	49	7	1	7	21	VCC2	VCC2	VCC WORD (1 OF 3)	TT&C	KIR-23	S	All Power-Up			Loral mnemonic = "VCC-2"
A	4	10	1	6	6	1	WAARMA	WAARMA	OCU A PYROS (W-ANT) ARMED	ANT	WSA	DL	All Power-Up		1=Armed 0=Disarmed	
A	4	11	1	6	6	1	WAARMB	WAARMB	OCU B PYROS (W-ANT) ARMED	ANT	WSA	DL	All Power-Up		1=Armed 0=Disarmed	
3	8	59	8	0	7	8	WANTHESP	WANTHESP	W-HI ELE SPOOL POT WIP POS	ANT	WSA	AP	All Power-Up	degrees		Zero-filled in Format 1
2	7	59	8	0	7	8	WANTHIDT	WANTHIDT	W-HI INNER HNGE DMP TEMP	ANT	WSA	AP	All Power-Up	Celsius		Zero-filled in Format 1
1	8	59	8	0	7	8	WANTHIHP	WANTHIHP	W-HI INNER HNGE POT WIP POS	ANT	WSA	AP	All Power-Up	degrees		Zero-filled in Format 1
5	7	59	8	0	7	8	WANTHODT	WANTHODT	W-HI OUTER HNGE DMP TEMP	ANT	WSA	AP	All Power-Up	Celsius		Zero-filled in Format 1
2	8	59	8	0	7	8	WANTHOHP	WANTHOHP	W-HI OUTER HNGE POT WIP POS	ANT	WSA	AP	All Power-Up	degrees		Zero-filled in Format 1
1	7	59	8	0	7	8	WANTHSDT	WANTHSDT	W-HI ELEM SPOOL DMP TEMP	ANT	WSA	AP	All Power-Up	Celsius		Zero-filled in Format 1
6	8	59	8	0	7	8	WANTLESP	WANTLESP	W-LO ELE SPOOL POT WIP POS	ANT	WSA	AP	All Power-Up	degrees		Zero-filled in Format 1
4	7	59	8	0	7	8	WANTLIDT	WANTLIDT	W-LO INNER HNGE DMP TEMP	ANT	WSA	AP	All Power-Up	Celsius		Zero-filled in Format 1
4	8	59	8	0	7	8	WANTLIHP	WANTLIHP	W-LO INNER HNGE POT WIP POS	ANT	WSA	AP	All Power-Up	degrees		Zero-filled in Format 1
6	7	59	8	0	7	8	WANTLODT	WANTLODT	W-LO OUTER HNGE DMP TEMP	ANT	WSA	AP	All Power-Up	Celsius		Zero-filled in Format 1
5	8	59	8	0	7	8	WANTLOHP	WANTLOHP	W-LO OUTER HNGE POT WIP POS	ANT	WSA	AP	All Power-Up	degrees		Zero-filled in Format 1
3	7	59	8	0	7	8	WANTLSDT	WANTLSDT	W-LO ELE SPOOL DMP TEMP	ANT	WSA	AP	All Power-Up	Celsius		Zero-filled in Format 1
NA	NA	NA	NA	0	NA	8	WCMDERDI	WCMDERDI	CMDERCNT-DATAINCONSIST	NDS	BDW	S	SSOH			357
NA	NA	NA	NA	0	NA	8	WCMDERMC	WCMDERMD	SERDATAERCNT-MSGCORRUPT	NDS	BDW	S	SSOH			356
NA	NA	NA	NA	0	NA	8	WCMDERUA	WCMDERUA	NOOPERERCNT-UNABLETOACT	NDS	BDW	S	SSOH			358
NA	NA	NA	NA	4	NA	1	WDELCAL	WDELCAL	BDW DELAYED CALIBRAT	NDS	BDP	S	SSOH			2984
NA	NA	NA	NA	1	NA	1	WDOGTMR	WDOGTMR	DISABLEWATCHDOGTIMER	NDS	BDP	S	SSOH			3066
NA	NA	NA	NA	0	NA	8	WDTOERR	WDTOERR	TIMER TIMEOUT ER CNT	NDS	BDP-MP	S	SSOH			40
NA	NA	NA	NA	0	NA	8	WHSCDUMP	WHSCDUMP	MATCHED WHS EV CNT	NDS	BDP-MP	S	SSOH			29
NA	NA	NA	NA	1	NA	1	WHSPLNK	WHSPLNK	WHS LAST EV MSG XFER	NDS	BDP-IP	S	SSOH			165
NA	NA	NA	NA	1	NA	1	WHSQPLNK	WHSQPLNK	WHS PLINK EVXFER FLG	NDS	BDP-IP	S	SSOH			166
NA	NA	NA	NA	3	NA	1	WHSTBFTO	WHSTBFTO	TMP BUF TAKEOUTFLGS:WHS	NDS	BDP-MP	S	SSOH			62
NA	NA	NA	NA	0	NA	16	WHSTBIP	WHSTBIP	WHS TMP BUFF I/P PNT	NDS	BDP-MP	S	SSOH			109
NA	NA	NA	NA	0	NA	16	WHSTBOP	WHSTBOP	WHS TMP BUFF O/P PNT	NDS	BDP-MP	S	SSOH			111
NA	NA	NA	NA	0	NA	16	WHSTBQUE	WHSTBQUE	WHS TMP BUFF QUE CNT	NDS	BDP-MP	S	SSOH			113
NA	NA	NA	NA	6	NA	1	WHXTBFTO	WHXTBFTO	TMP BUF TAKOUTFLGS:WHX	NDS	BDP-MP	S	SSOH			62
NA	NA	NA	NA	0	NA	16	WLSADD1	WLSADD1	WLS SAVEADDR ENTRY 1	NDS	BDP-MP	S	SSOH			119
NA	NA	NA	NA	0	NA	16	WLSADD10	WLSADD10	WLS SAVEADDR ENTRY 10	NDS	BDP-MP	S	SSOH			137
NA	NA	NA	NA	0	NA	16	WLSADD2	WLSADD2	WLS SAVEADDR ENTRY 2	NDS	BDP-MP	S	SSOH			121
NA	NA	NA	NA	0	NA	16	WLSADD3	WLSADD3	WLS SAVEADDR ENTRY 3	NDS	BDP-MP	S	SSOH			123
NA	NA	NA	NA	0	NA	16	WLSADD4	WLSADD4	WLS SAVEADDR ENTRY 4	NDS	BDP-MP	S	SSOH			125
NA	NA	NA	NA	0	NA	16	WLSADD5	WLSADD5	WLS SAVEADDR ENTRY 5	NDS	BDP-MP	S	SSOH			127
NA	NA	NA	NA	0	NA	16	WLSADD6	WLSADD6	WLS SAVEADDR ENTRY 6	NDS	BDP-MP	S	SSOH			129
NA	NA	NA	NA	0	NA	16	WLSADD7	WLSADD7	WLS SAVEADDR ENTRY 7	NDS	BDP-MP	S	SSOH			131
NA	NA	NA	NA	0	NA	16	WLSADD8	WLSADD8	WLS SAVEADDR ENTRY 8	NDS	BDP-MP	S	SSOH			133

NA	NA	NA	NA	0	NA	16	WLSADD9	WLSADD9	WLS SAVEADDR ENTRY 9	NDS	BDP-MP	S	SSOH			135
NA	NA	NA	NA	0	NA	8	WLSL3OUT	WLSL3OUT	WLS L3 OUTPUT COUNT	NDS	BDP-MP	S	SSOH			68
NA	NA	NA	NA	4	NA	1	WLSPLNK	WLSPLNK	WLS LAST EV MSG XFER	NDS	BDP-IP	S	SSOH			165
NA	NA	NA	NA	3	NA	1	WLSQPLNK	WLSQPLNK	WLS PLINK EV XFERFLG	NDS	BDP-IP	S	SSOH			166
NA	NA	NA	NA	5	NA	1	WLSTBFTO	WLSTBFTO	TMP BUF TAKEOUTFLGS:WLS	NDS	BDP-MP	S	SSOH			62
NA	NA	NA	NA	0	NA	16	WLSTBIP	WLSTBIP	WLS TMP BUFF I/P PNT	NDS	BDP-MP	S	SSOH			115
NA	NA	NA	NA	0	NA	16	WLSTBOP	WLSTBOP	WLS TMP BUFF O/P PNT	NDS	BDP-MP	S	SSOH			117
NA	NA	NA	NA	0	NA	8	WLSTBQUE	WLSTBQUE	WLS TMP BUF QUEUECNT	NDS	BDP-MP	S	SSOH			67
NA	NA	NA	NA	7	NA	1	WLXTBFTO	WLXTBFTO	TMP BUF TAKEOUTFLGS:WLX	NDS	BDP-MP	S	SSOH			62
NA	NA	NA	NA	4	NA	4	WMEMLDH	WMEMLDH	4 MSB OF START ADDR	NDS	BDP	S	SSOH			3068
NA	NA	NA	NA	0	NA	8	WMEMLDL	WMEMLDL	LOBYTE OF START ADDR	NDS	BDP	S	SSOH			3070
NA	NA	NA	NA	0	NA	8	WMEMLDM	WMEMLDM	MIDBYTE OF START ADDR	NDS	BDP	S	SSOH			3069
NA	NA	NA	NA	0	NA	8	WMLODDAT	WMLODDAT	MEMORY LOAD DATA	NDS	BDP	S	SSOH			3071
NA	NA	NA	NA	1	NA	1	WREFBDY	WREFBDY	WRITE REFRESH BDY	NDS	BDP	S	SSOH			2994
NA	NA	NA	NA	0	NA	1	WREFGDR	WREFGDR	WRITE REFRESH GDR	NDS	BDP	S	SSOH			2994
NA	NA	NA	NA	2	NA	1	WREFIP	WREFIP	WRITE REFRESH BDP IP	NDS	BDP	S	SSOH			2994
NA	NA	NA	NA	3	NA	1	WREFMP	WREFMP	WRITE REFRESH BDP MP	NDS	BDP	S	SSOH			2994
NA	NA	NA	NA	2	NA	6	WSDMPADH	WSDMPADH	S-BAND DUMP ADDRESS	NDS	BDP	S	SSOH			3043
NA	NA	NA	NA	1	NA	7	WSDMPADL	WSDMPADL	S-BAND DUMP ADDRESS	NDS	BDP	S	SSOH			3061
NA	NA	NA	NA	0	NA	1	WSTST1EX	WSTST1EX	BDW SYS TEST EXECUTE	NDS	BDP	S	SSOH			2996
NA	NA	NA	NA	3	NA	1	WSTST2EX	WSTST2EX	BDW DISCRETE SYSTEST	NDS	BDP	S	SSOH			2985
NA	NA	NA	NA	0	NA	8	WSTSTTM	WSTSTTM	SYSTEM TEST TIME	NDS	BDP	S	SSOH			3054
NA	NA	NA	NA	5	NA	1	WUPLBDY	WUPLBDY	WRITE UPLOAD BDY	NDS	BDP	S	SSOH			2994
NA	NA	NA	NA	4	NA	1	WUPLGDR	WUPLGDR	WRITE UPLOAD GDR	NDS	BDP	S	SSOH			2994
NA	NA	NA	NA	6	NA	1	WUPLIP	WUPLIP	WRITE UPLOAD BDP IP	NDS	BDP	S	SSOH			2994
NA	NA	NA	NA	7	NA	1	WUPLMP	WUPLMP	WRITE UPLOAD BDP MP	NDS	BDP	S	SSOH			2994
NA	NA	NA	NA	5	NA	1	WXPLNK	WXPLNK	WHX/WLX LASTEVMSGXFR	NDS	BDP-IP	S	SSOH			165
NA	NA	NA	NA	4	NA	1	WXQPLNK	WXQPLNK	WHX/WLX PLNKEVXFRGFLG	NDS	BDP-IP	S	SSOH			166
NA	NA	NA	NA	2	NA	1	X-YTRIG	X-YTRIG	ENABLE X-TRIG-Y	NDS	BDP	S	SSOH			2970
NA	NA	NA	NA	6	NA	1	XFRINTER	XFRINTER	INTER(PARA FIFO XFER)	NDS	BDP-MP	S	SSOH			41
A	8	16	1	2	2	1	XMTR1PWR	XMTR1PWR	S-BAND XMTR 1 28VDC ON/OFF	TT&C	SBT	S	All Power-Up		1=On 0=Off	
2	2	56	8	0	7	8	XMTR1RFP	XMTR1RFP	S-BAND XMTR 1 RF PWR OUT	TT&C	SBT	AH	All Power-Up	watts		
6	1	56	8	0	7	8	XMTR1T	XMTR1T	S-BAND XMTR 1 TEMP	TT&C	SBT	AH	All Power-Up	Celsius		
A	5	16	1	3	3	1	XMTR1TLM	XMTR1TLM	S-BAND XMTR 1 TLM ENABLE	TT&C	SBT	S	All Power-Up		1=Disabled 0=Enabled	
A	8	16	1	6	6	1	XMTR2PWR	XMTR2PWR	S-BAND XMTR 2 28VDC ON/OFF	TT&C	SBT	S	All Power-Up		1=On 0=Off	
5	3	56	8	0	7	8	XMTR2RFP	XMTR2RFP	S-BAND XMTR 2 RF PWR OUT	TT&C	SBT	AH	All Power-Up	watts		
6	3	56	8	0	7	8	XMTR2T	XMTR2T	S-BAND XMTR 2 TEMP	TT&C	SBT	AH	All Power-Up	Celsius		
A	5	16	1	7	7	1	XMTR2TLM	XMTR2TLM	S-BAND XMTR 2 TLM ENABLE	TT&C	SBT	S	All Power-Up		1=Disabled 0=Enabled	
A	7	64	1	4	4	1	XMTRSEL	MSTRSEL	S-BAND XMTR SELECT 1/2	TT&C	SBT	DL	All Power-Up		1=Xmtr 2 Selected 0=Xmtr 1 Selected	
NA	NA	NA	NA	4	NA	1	XSOURCE	XSOURCE	X TRIGGER SOURCE	NDS	BDY	S	SSOH			221
A	6	16	1	4	4	1	XST34ARM	XST34ARM	XSTRAP LATCH VALVE PWR 3&4ARM	RCS	LV	S	All Power-Up		1=Armed 0=Disarmed	
A	5	16	1	4	4	1	XST34PWR	XST34PWR	XSTRAP LATCH VALVE PWR 3&4ENAB	RCS	LV	S	All Power-Up		1=Enabled 0=Disabled	
A	5	64	1	2	2	1	XSTPCLS3	XSTPCLS3	XSTRP LATCH VALVE 3 CLOSE	RCS	LV	DL	All Power-Up		1=Closed 0=Open	
A	5	64	1	3	3	1	XSTPCLS4	XSTPCLS4	XSTRP LATCH VALVE 4 CLOSE	RCS	LV	DL	All Power-Up		1=Closed 0=Open	
A	6	64	1	2	2	1	XSTOPON3	XSTOPON3	XSTRP LATCH VALVE 3 OPEN	RCS	LV	DL	All Power-Up		1=Open 0=Closed	
A	6	64	1	3	3	1	XSTOPON4	XSTOPON4	XSTRP LATCH VALVE 4 OPEN	RCS	LV	DL	All Power-Up		1=Open 0=Closed	

NA	NA	NA	NA	2	NA	1	XSTST1EX	XSTST1EX	BDX/D SYS TEST EXECUTIVE	NDS	BDP	S	SSOH			2984
NA	NA	NA	NA	2	NA	1	XSTST2EX	XSTST2EX	BDX DISCRETE SYSTEST	NDS	BDP	S	SSOH			2985
NA	NA	NA	NA	4	NA	4	XSTSTOFF	XSTSTOFF	BDX SYSTSTENTIMEBITS	NDS	BDP	S	SSOH			2982
NA	NA	NA	NA	6	NA	1	XSTSTPAR	XSTSTPAR	BDX SYSTEM TEST	NDS	BDP	S	SSOH			3000
A	1	64	1	6	6	1	XSYSTST	XSYSTST	BDX SYSTEM TEST	NDS	BDX	S	All Power-Up		0=Disabled 1=Enabled	SSOH Byte 31 L3 Format
NA	NA	NA	NA	5	NA	1	XYTRIG	XYTRIG	X TRIGGER Y	NDS	BDY	S	SSOH			221
3	6	54	8	0	7	16	YAWERRA	YAWERRA	YAW ATTITUDE ERROR (1 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
3	6	55	8	0	7	16	YAWERRA	YAWERRA	YAW ATTITUDE ERROR (2 OF 2)	ADS	SPU A	S	Normal Thruster	radians		
3	6	62	8	0	7	16	YAWERRB	YAWERRB	YAW ATTITUDE ERROR (1 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
3	6	63	8	0	7	16	YAWERRB	YAWERRB	YAW ATTITUDE ERROR (2 OF 2)	ADS	SPU B	S	Normal Thruster	radians		
3	7	52	8	0	7	16	YAWINTA	YAWINTA	YAW ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
3	7	53	8	0	7	16	YAWINTA	YAWINTA	YAW ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU A	S	Thruster	rad/sec		
3	7	60	8	0	7	16	YAWINTB	YAWINTB	YAW ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU B	S	Thruster	rad/sec		
3	7	61	8	0	7	16	YAWINTB	YAWINTB	YAW ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU B	S	Thruster	rad/sec		
3	7	52	8	0	7	16	YAWINTNA	YAWINTNA	YAW ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU A	S	Normal	rad/sec		
3	7	53	8	0	7	16	YAWINTNA	YAWINTA	YAW ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU A	S	Normal	rad/sec		
3	7	60	8	0	7	16	YAWINTNB	YAWINTNB	YAW ATTITUDE INTEG ERROR (1 OF 2)	ADS	SPU B	S	Normal	rad/sec		
3	7	61	8	0	7	16	YAWINTNB	YAWINTNB	YAW ATTITUDE INTEG ERROR (2 OF 2)	ADS	SPU B	S	Normal	rad/sec		
3	8	52	8	0	7	16	YAWMEA	YAWMEA	YAW MOMENTUM ERROR (1 OF 2)	ADS	SPU A	S	Normal Thruster	in-lbf-sec		
3	8	53	8	0	7	16	YAWMEA	YAWMEA	YAW MOMENTUM ERROR (2 OF 2)	ADS	SPU A	S	Normal Thruster	in-lbf-sec		
3	8	60	8	0	7	16	YAWMEB	YAWMEB	YAW MOMENTUM ERROR (1 OF 2)	ADS	SPU B	S	Normal Thruster	in-lbf-sec		
3	8	61	8	0	7	16	YAWMEB	YAWMEB	YAW MOMENTUM ERROR (2 OF 2)	ADS	SPU B	S	Normal Thruster	in-lbf-sec		
3	7	54	8	0	7	16	YAWRATA	YAWRATA	YAW ATTITUDE RATE ERROR (1 OF 2)	ADS	SPU A	S	Normal Thruster	rad/sec		
3	7	55	8	0	7	16	YAWRATA	YAWRATA	YAW ATTITUDE RATE ERROR (2 OF 2)	ADS	SPU A	S	Normal Thruster	rad/sec		
3	7	62	8	0	7	16	YAWRATB	YAWRATB	YAW ATTITUDE RATE ERROR (1 OF 2)	ADS	SPU B	S	Normal Thruster	rad/sec		
3	7	63	8	0	7	16	YAWRATB	YAWRATB	YAW ATTITUDE RATE ERROR (2 OF 2)	ADS	SPU B	S	Normal Thruster	rad/sec		
A	7	14	8	0	7	16	YAWSNPA	YAWSNPA	YAW ANGLE SUN NADIR (1 OF 2)	ADS	SPU A	S	Normal	radians		
A	7	15	8	0	7	16	YAWSNPA	YAWSNPA	YAW ANGLE SUN NADIR (2 OF 2)	ADS	SPU A	S	Normal	radians		
A	7	22	8	0	7	16	YAWSNPB	YAWSNPB	YAW ANGLE SUN NADIR (1 OF 2)	ADS	SPU B	S	Normal	radians		
A	7	23	8	0	7	16	YAWSNPB	YAWSNPB	YAW ANGLE SUN NADIR (2 OF 2)	ADS	SPU B	S	Normal	radians		
NA	NA	NA	NA	3	NA	1	YD2-10	YD2-11	DISABLE YD 2-10	NDS	BDP	S	SSOH			3015
NA	NA	NA	NA	5	NA	1	YDAUTO	YDAUTO	DISABLE AUTO YD	NDS	BDP	S	SSOH			2969
NA	NA	NA	NA	0	NA	8	YDL3OUT	YDL3OUT	YD L3 OUTPUT COUNT	NDS	BDP-MP	S	SSOH			65
NA	NA	NA	NA	0	NA	1	YDMSG	YDMSG	FORCE BDY STRATEGICS	NDS	BDP	S	SSOH			2971
NA	NA	NA	NA	3	NA	1	YDPLNK	YDPLNK	YD LAST EV MSG XFER	NDS	BDP-IP	S	SSOH			165
NA	NA	NA	NA	2	NA	1	YDQPLNK	YDQPLNK	YD PLINK EV XFER FLG	NDS	BDP-IP	S	SSOH			166

NA	NA	NA	NA	4	NA	1	YDTFBTO	YDTBFTO	TMP BUF TAKEOUTFLGS:YD	NDS	BDP-MP	S	SSOH			62
NA	NA	NA	NA	0	NA	8	YDTBQUE	YDTBQUE	YD TMP BUF QUEUE CNT	NDS	BDP-MP	S	SSOH			64
NA	NA	NA	NA	1	NA	1	YEERFEN	YEERFEN	EN BDY EEPROM REFRES	NDS	BDP	S	SSOH			2992
NA	NA	NA	NA	3	NA	2	YEVTMSG	YEVTMSG	YFAST AND YSLOW	NDS	BDP	S	SSOH			2971
NA	NA	NA	NA	1	NA	5	YFBTLEV	YFBTLEV	YFAST BASIC TRIG LEVEL	NDS	BDY	S	SSOH			218
NA	NA	NA	NA	6	NA	1	YFCMDUPD	YFCMDUPD	YFAST RECENT CMD UPDATE	NDS	BDY	S	SSOH			220
NA	NA	NA	NA	2	NA	2	YFCNTC	YFCNTC	YFAST CNT CODE CMD BITS	NDS	BDY	S	SSOH			219
NA	NA	NA	NA	5	NA	1	YFCOMP	YFCOMP	YFAST COMPENSATION RATE	NDS	BDY	S	SSOH			219
NA	NA	NA	NA	1	NA	1	YFCTRIG	YFCTRIG	YFAST COARSE TRIGGER	NDS	BDY	S	SSOH			219
NA	NA	NA	NA	1	NA	1	YFDTBFTO	YFDTBFTO	TMPBUFTAKOUTFLGS:YFINYD	NDS	BDP-MP	S	SSOH			62
NA	NA	NA	NA	0	NA	1	YFEVENT	YFEVENT	YFAST EVENT CONFIRMED	NDS	BDY	S	SSOH			219
NA	NA	NA	NA	6	2	1	YFGAIN	YFGAIN	YFAST GAIN BITS	NDS	BDY	S	SSOH			218
NA	NA	NA	NA	3	NA	1	YFINTMSK	YFINTMSK	YFAST INTERRUPT MASK	NDS	BDY	S	SSOH			211
NA	NA	NA	NA	7	NA	1	YFLGTRST	YFLGTRST	YFAST LIGHTNINGRESETINH	NDS	BDY	S	SSOH			219
NA	NA	NA	NA	4	NA	1	YFLIGHT	YFLIGHT	YFAST LIGHTNINGDETECTED	NDS	BDY	S	SSOH			219
NA	NA	NA	NA	0	NA	3	YFLTST	YFLTST	YFAST LITNINGTSTLEVBITS	NDS	BDY	S	SSOH			220
NA	NA	NA	NA	4	NA	1	YFMODE	YFMODE	YFAST TRIGGER MODE	NDS	BDY	S	SSOH			220
NA	NA	NA	NA	0	NA	1	YFPLNK	YFPLNK	YF LAST EV MSG XFER	NDS	BDP-IP	S	SSOH			165
NA	NA	NA	NA	3	NA	1	YFPTST	YFPTST	YFAST PARTICLE TEST EN	NDS	BDY	S	SSOH			220
NA	NA	NA	NA	0	NA	1	YFQPLNK	YFQPLNK	YF PLINK EV XFER FLG	NDS	BDP-IP	S	SSOH			166
NA	NA	NA	NA	2	NA	2	YFSTCNT	YFSTCNT	YFAST COUNT CODE	NDS	BDP	S	SSOH			2965
NA	NA	NA	NA	6	NA	1	YFSTCOMP	YFSTCOMP	YFAST FB COMP RATE	NDS	BDP	S	SSOH			2966
4	3	24	8	0	7	8	YFSTFB	YFSTFB	YFAST FEEDBACK	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3408
NA	NA	NA	NA	3	NA	1	YFSTINT	YFSTINT	YFAST INTERRUPT	NDS	BDP	S	SSOH			2970
NA	NA	NA	NA	1	NA	1	YFSTLRST	YFSTLRST	INH YFAST LITNINGRST	NDS	BDP	S	SSOH			2965
NA	NA	NA	NA	0	NA	3	YFSTLT	YFSTLT	YFAST LIGHTNING TEST	NDS	BDP	S	SSOH			2966
NA	NA	NA	NA	4	NA	1	YFSTMODE	YFSTMODE	YFAST TRIGGER MODE	NDS	BDP	S	SSOH			2966
4	2	24	8	0	7	8	YFSTN	YFSTN	YFAST NOISE	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3407
NA	NA	NA	NA	3	NA	1	YFSTPTST	YFSTPTST	YFAST PARTICLE TEST	NDS	BDP	S	SSOH			2966
NA	NA	NA	NA	0	NA	16	YFSTTC	YFSTTC	YFAST TRIGGER COUNT	NDS	BDY	S	SSOH			203
NA	NA	NA	NA	4	NA	4	YFSTTL	YFSTTL	YFAST TRIGGER LEVEL	NDS	BDP	S	SSOH			2965
NA	NA	NA	NA	7	NA	1	YFSTTRIG	YFSTTRIG	ENABLE YFAST TRIGGER	NDS	BDP	S	SSOH			2966
NA	NA	NA	NA	2	NA	2	YFSTXMIT	YFSTXMIT	L3DTXFRIFYFA&YFA/YSL	NDS	BDP	S	SSOH			2996
NA	NA	NA	NA	0	NA	2	YFSWCOIN	YFSWCOIN	YFAST BDW COINCIDENC	NDS	BDP	S	SSOH			3012
NA	NA	NA	NA	0	NA	1	YFTBFTO	YFTBFTO	TMP BUF TAKOUTFLGS:YF	NDS	BDP-MP	S	SSOH			62
NA	NA	NA	NA	5	NA	1	YFTHRCHG	YFTHRCHG	YFAST RECENTTHRESCHANGE	NDS	BDY	S	SSOH			220
NA	NA	NA	NA	7	NA	1	YFTRGRST	YFTRGRST	YFAST RECENT TRIG RESET	NDS	BDY	S	SSOH			220
NA	NA	NA	NA	0	NA	1	YFTRIG	YFTRIG	YFAST TRIGGER ENABLE	NDS	BDY	S	SSOH			218
NA	NA	NA	NA	6	NA	1	YLTPLNK	YLTPLNK	Y LT LAST EVMSGXFER	NDS	BDP-IP	S	SSOH			165
NA	NA	NA	NA	6	NA	1	YLTQPLNK	YLTQPLNK	Y LT PLINK EVXFERFLG	NDS	BDP-IP	S	SSOH			166
NA	NA	NA	NA	7	NA	1	YMOINT	YMOINT	BDY MOTION INTERRUPT	NDS	BDP	S	SSOH			2970
NA	NA	NA	NA	7	NA	1	YMOPLNK	YMOPLNK	Y MOT LASTEVMSG XFER	NDS	BDP-IP	S	SSOH			165
NA	NA	NA	NA	7	NA	1	YMOQPLNK	YMOQPLNK	Y MOT PLINKEVXFERFLG	NDS	BDP-IP	S	SSOH			166
NA	NA	NA	NA	7	NA	1	YNPMGAIN	YNPMGAIN	BDY NPMS GAIN SELECT	NDS	BDP	S	SSOH			2981
NA	NA	NA	NA	6	NA	1	YNPMTEST	YNPMTEST	BDY NPMS DATATESTNEXTX1	NDS	BDP	S	SSOH			2981
NA	NA	NA	NA	0	NA	16	YNSCNT	YNSCNT	OPT EV NOTSTORED CNT	NDS	BDY	S	SSOH			249
A	8	14	8	0	7	16	YRATSNPA	YRATSNPA	YAW RATE SUN NADIR (1 OF 2)	ADS	SPU A	S	Normal	rad/sec		
A	8	15	8	0	7	16	YRATSNPA	YRATSNPA	YAW RATE SUN NADIR (2 OF 2)	ADS	SPU A	S	Normal	rad/sec		
A	8	22	8	0	7	16	YRATSNPB	YRATSNPB	YAW RATE SUN NADIR (1 OF 2)	ADS	SPU B	S	Normal	rad/sec		
A	8	23	8	0	7	16	YRATSNPB	YRATSNPB	YAW RATE SUN NADIR (2 OF 2)	ADS	SPU B	S	Normal	rad/sec		
NA	NA	NA	NA	4	NA	1	YSAUTO	YSAUTO	DISABLE AUTO YS	NDS	BDP	S	SSOH			2969
NA	NA	NA	NA	0	NA	4	YSBKGD	YSBKGD	YSLOW BACKGROUND CALC	NDS	BDY	S	SSOH			221
NA	NA	NA	NA	1	NA	5	YSBTLEV	YSBTLEV	YSLOW BASIC TRIG LEVEL	NDS	BDY	S	SSOH			212
NA	NA	NA	NA	6	NA	1	YSCMDUPD	YSCMDUPD	YSLOW RECENT CMD UPDATE	NDS	BDY	S	SSOH			214
NA	NA	NA	NA	2	NA	2	YSCNTC	YSCNTC	YSLOW CNT CODE CMD BITS	NDS	BDY	S	SSOH			213
NA	NA	NA	NA	5	NA	2	YSCOMP	YSCOMP	YSLOW COMPENSATION RATE	NDS	BDY	S	SSOH			213
NA	NA	NA	NA	1	NA	1	YSCTRIG	YSCTRIG	YSLOW COARSE TRIGGER	NDS	BDY	S	SSOH			213

NA	NA	NA	NA	0	NA	1	YSEVENT	YSEVENT	YSLOW EVENT CONFIRMED	NDS	BDY	S	SSOH			213
NA	NA	NA	NA	6	NA	2	YSGAIN	YSGAIN	YSLOW GAIN BITS	NDS	BDY	S	SSOH			212
NA	NA	NA	NA	5	NA	1	YSINTMSK	YSINTMSK	YSLOW INTERRUPT MASK	NDS	BDY	S	SSOH			211
NA	NA	NA	NA	7	NA	1	YSLGTRST	YSLGTRST	YSLOW LIGHTNING RST INH	NDS	BDY	S	SSOH			213
NA	NA	NA	NA	4	NA	1	YSLIGHT	YSLIGHT	YSLOW LIGHTNINGDETECTED	NDS	BDY	S	SSOH			213
NA	NA	NA	NA	2	NA	2	YSLOCNT	YSLOCNT	YSLOW COUNT CODE	NDS	BDP	S	SSOH			2963
NA	NA	NA	NA	5	NA	2	YSLOCOMP	YSLOCOMP	YSLOW BF COMP RATE	NDS	BDP	S	SSOH			2964
NA	NA	NA	NA	5	NA	1	YSLOINT	YSLOINT	YSLOW INTERRUPT	NDS	BDP	S	SSOH			2970
NA	NA	NA	NA	1	NA	1	YSLOLRST	YSLOLRST	INHYSLOWLITNINGRESET	NDS	BDP	S	SSOH			2963
NA	NA	NA	NA	0	NA	3	YSLOLT	YSLOLT	YSLOW LIGHTNING TEST	NDS	BDP	S	SSOH			2964
NA	NA	NA	NA	4	NA	1	YSLOMODE	YSLOMODE	YSLOW TRIGGER MODE	NDS	BDP	S	SSOH			2964
4	1	24	8	0	7	8	YSLON	YSLON	YSLOW NOISE	NDS	BDY	S	All Power-Up	volts		SSOH Byte 3406
NA	NA	NA	NA	3	NA	1	YSLOPTST	YSLOPTST	YSLOW PARTICLE TEST	NDS	BDP	S	SSOH			2964
NA	NA	NA	NA	0	NA	16	YSLOTC	YSLOTC	YSLOW TRIGGER COUNT	NDS	BDY	S	SSOH			205
NA	NA	NA	NA	4	NA	4	YSLOTL	YSLOTL	YSLOW TRIGGER LEVEL	NDS	BDP	S	SSOH			2963
NA	NA	NA	NA	7	NA	1	YSLOTRIG	YSLOTRIG	ENABLE YSLOW TRIGGER	NDS	BDP	S	SSOH			2964
NA	NA	NA	NA	4	NA	2	YSLOXMIT	YSLOXMIT	L3DTXFRIFYSL&YSL/MOT	NDS	BDP	S	SSOH			2996
NA	NA	NA	NA	0	NA	3	YSLTST	YSLTST	YSLOW LITNINGTSTLEVBITS	NDS	BDY	S	SSOH			214
NA	NA	NA	NA	4	NA	1	YSMODE	YSMODE	YSLOW TRIGGER MODE	NDS	BDY	S	SSOH			214
NA	NA	NA	NA	4	NA	1	YSOHINT	YSOHINT	BDY SOH INTERRUPT	NDS	BDP	S	SSOH			2970
NA	NA	NA	NA	3	NA	1	YSPTST	YSPTST	YSLOW PARTICLE TEST EN	NDS	BDY	S	SSOH			214
NA	NA	NA	NA	5	NA	1	YSTHRCHG	YSTHRCHG	YSLOW RECENTTHRESCHANGE	NDS	BDY	S	SSOH			214
NA	NA	NA	NA	5	NA	1	YSTORE	YSTORE	YT/YS	NDS	BDP	S	SSOH			2966
NA	NA	NA	NA	7	NA	1	YSTRGRST	YSTRGRST	YSLOW RECENT TRIG RESET	NDS	BDY	S	SSOH			214
NA	NA	NA	NA	0	NA	1	YSTRIG	YSTRIG	YSLOW TRIGGER ENABLE	NDS	BDY	S	SSOH			212
NA	NA	NA	NA	1	NA	1	YSTST1EX	YSTST1EX	BDY SYS TEST EXECUTE	NDS	BDP	S	SSOH			2984
NA	NA	NA	NA	7	NA	1	YSTST2-1	YSTST2-1	BDY SYSTST 2-1 SPIKE	NDS	BDP	S	SSOH			2974
NA	NA	NA	NA	6	NA	1	YSTST2-2	YSTST2-2	BDYSYSTST2-2SQUARPUL	NDS	BDP	S	SSOH			2974
NA	NA	NA	NA	5	NA	1	YSTST2-4	YSTST2-4	BDY SYSTEST 2-4 RAMP	NDS	BDP	S	SSOH			2974
NA	NA	NA	NA	4	NA	1	YSTST2-8	YSTST2-8	BDYSYSTST2-8MOTIONCH	NDS	BDP	S	SSOH			2974
NA	NA	NA	NA	1	NA	1	YSTST2EX	YSTST2EX	BDY DISCRETE SYSTEST	NDS	BDP	S	SSOH			2985
NA	NA	NA	NA	0	NA	4	YSTSTOFF	YSTSTOFF	BDY SYSTSTENTIMEBITS	NDS	BDP	S	SSOH			2982
A	1	64	1	5	5	1	YSYSTST	YSYSTST	BDY SYSTEM TEST	NDS	BDY	S	All Power-Up		0=Disabled 1=Enabled	SSOH Byte 31 L3 Format
NA	NA	NA	NA	0	NA	16	ZTIME	ZTIME	ZTIME-LAST SUBSYSUPDATE	NDS	BDP	S	SSOH			4
NA	NA	NA	NA	4	NA	1	ZTIMEINT	ZTIMEINT	EN ZTIME INTERRUPT	NDS	BDP	S	SSOH			3010
NA	NA	NA	NA	4	NA	1	ZTINTER	ZTINTER	INT ERR FLAG (ZTIME)	NDS	BDP-MP	S	SSOH			41
NA	NA	NA	NA	7	NA	1	ZTWDGINT	ZTWDGINT	EN ZTIME WATCHDOGINT	NDS	BDP	S	SSOH			3010
NA	NA	NA	NA	7	NA	1	ZTWDINTR	ZTWDINTR	INT ERR FLG(ZTIMEWD)	NDS	BDP-MP	S	SSOH			41
NA	NA	NA	NA	2	NA	1	ZTXFRMSG	ZTXFRMSG	XFER MSG FLAG ZTIME	NDS	BDP-MP	S	SSOH			46

REFERENCE

C-1. GPS IIR Orbital Operatons Handbook (OOH), Volume II - Telemetry Processing, G73-OOH-0031B, Martin Marietta Corp. Philadelphia, PA., 25 January 1995.

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